



# **BOTANICAL LATIN**

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**New Edition**

**William T Stearn**

BOTANICAL LATIN

# BOTANICAL LATIN

History, Grammar  
Syntax, Terminology and Vocabulary

WILLIAM T. STEARN

*Third edition, revised*



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IN APPRECIATION OF THEIR HELP  
OVER MANY YEARS TO BOTANISTS PERPLEXED  
BY THE LATIN LANGUAGE

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## Apologia pro Libro meo

'In all Ages wherein Learning hath Flourished, complaint hath been made of the Itch of Writing, and the multitude of worthless Books, wherein importunate Scribblers have pestered the World . . . I am sensible that this Tractate may likely incur the Censure of a superfluous Piece. . . . First therefore, in Excuse of it, I plead, That there are in it some Considerations new and untouched by others: wherein if I be mistaken, I alledge Secondly, that manner of Delivery and Expression may be more suitable to some Mens Apprehension, and facile to their Understandings. If that will not hold, I pretend Thirdly, That all the Particulars contained in this Book, cannot be found in any one Piece known to me, but ly scattered and dispersed in many, and so this may serve to relieve those Fastidious Readers, that are not willing to take the Pains to search them out: and possibly, there may be some whose Ability (whatever their Industry might be) will not serve them to purchase, nor their opportunity to borrow, those Books, who yet may spare Money enough to buy so inconsiderable a Trifle.'

Thus begins John Ray's preface to his *The Wisdom of God manifested in the Works of Creation* (1691). These words of a seventeenth-century naturalist and scholar, who wrote extensively in Latin for international convenience but who also compiled a handy *Dictionarium trilingue* (1675; 8th ed., 1736) of English, Latin and Greek terms for the help of schoolboys, state aptly enough my justification of the present venture, but some account of its intent and origin may nevertheless be added if only to indicate both its sources and shortcomings.

This book aims to provide a working guide to the special kind of Latin internationally used by botanists for the description and naming of plants. Although primarily concerned with grammar, syntax and vocabulary, it attempts also to sketch the historical development of botanical Latin, which is here accepted as a channel of communication now so distinct from classical Latin in spirit and structure as to require independent treatment. Chapter II develops further the theme of the autonomy of botanical Latin. Hence, as Vivian Mercier says of his *The Irish Comic Tradition*, 'this book makes no claim to be the last word on its subject: it is much closer to being the first one'. The realm of literature which a knowledge of botanical Latin opens to botanists is a strange barbarous place for classicists; invited into it

as an interpreter, a good classical scholar may well feel like Alice meeting Humpty Dumpty through the looking-glass; he must have local help in order to find his way without misunderstanding of its long-established rules and customs. Such help the present book tries to give. The need for it became painfully apparent to me many years ago.

About 1930, when I was working in a Cambridge bookshop, an Indian student, now a very distinguished economic botanist, asked me to translate into Latin some descriptions of new Burmese species of Charophyta because no scholars in Cambridge would do it for him. In this, I have subsequently concluded, they wisely recognized their limitations. But such prudence was of no help at all to my friend, whose paper had been accepted for publication by a learned society only on condition that he provided Latin descriptions in accordance with the *International Rules of botanical Nomenclature*. Hence, reluctantly and laboriously, without having available any descriptions in Latin of these plants to serve as models and my memories of Virgil's *Aeneid* and Caesar's *Gallic War* proving quite useless, I rendered these imperfectly understood descriptions of plants I had never seen into a Latin which John Lindley would have justly described as written 'without the incumbrance of previous education' and about which A. B. Rendle gently wrote that 'the Latin descriptions are merely literal translations, sometimes faulty, of the English descriptions'. However, bad though they were, they enabled my friend's otherwise excellent work to be published; my one regret is that he acknowledged their origin! It should be noted that, when a botanical author thanks a professor of classics for providing a Latin description, this is usually in bad or at any rate unconventional botanical Latin; thus I have since then found myself erring in very respectable company. This teenage experience convinced me that someone, but not I, ought to produce a textbook for the guidance of the likes of me.

During the Second World War, however, when I had to sit for hour after hour, day after day, staring at the sky from a Royal Air Force ambulance awaiting planes which, fortunately, rarely crashed, I filled in time by extracting the descriptive epithets from a series of Floras lent me by the Lindley Library of the Royal Horticultural Society of London in the hope of producing some day an etymological dictionary of botanical names. I did not know that there already existed such a book, *Verklarend Woordenboek der wetenschappelijke Namen* (1936) by Cornelis Andries Backer (1874–1963). When, long after the war, I came across this massive 'boekje', undoubtedly the most comprehensive, reliable and scholarly work of its kind, it seemed foolish to continue with the preparation of one which would largely duplicate it,

so I decided to expand the grammatical and general chapters of mine, to limit the vocabulary to words used in descriptions and the basic elements of names, and to make it primarily a tool for taxonomists, a 'do-it-yourself' Latin kit. Thus the present work has grown out of war-time notebooks. Its preparation has necessarily been a much interrupted desultory business restricted to occasional evenings, week-ends and days of leave over the last twenty years. My procedure has been to take Latin descriptions by reputable botanical authors, extract the words used, arrange them alphabetically and then correlate them with standard glossaries, notably those by Bischoff, Lindley and Daydon Jackson, and thus to build up a vocabulary based primarily on usage and providing examples more or less ready for use. These examples come from a wide range of botanical literature. As regards the flowering-plants, probably Endlicher's *Genera Plantarum* (1836–50), Bentham and Hooker's *Genera Plantarum* (1863–83) and Urban's *Symbolae Antillanae* (1898–1928) have provided most. Many of those relating to non-vascular cryptogams have come from Montagne's *Sylloge Generum Specierumque Cryptogamarum* (1856), supplemented with a diversity of descriptions by later authors. Dr. G. C. Ainsworth, Mrs. F. L. Balfour-Browne, Mrs. Y. Butler, Mr. E. J. H. Corner, Mr. F. C. Deighton, Mr. A. Eddy, Mr. P. W. James and Mr. R. Ross kindly directed me to good representative descriptions in their respective fields of bryology, lichenology, mycology and phycology.

The name of John Lindley (1799–1865) occurs many times in this book. As a young man I became familiar with the Lindley Herbarium at the Botany School, Cambridge, curiously enough at about the same age as Lindley was when he became assistant librarian to Sir Joseph Banks and acquainted with the Banksian Herbarium. Later, as librarian of the Lindley Library of the Royal Horticultural Society of London, which Lindley also served for many years, I came to know his numerous publications and to admire the industry, tenacity and ability with which he undertook successfully so many different things. In writing this book I have been particularly impressed by the great contribution that Lindley made to exactness and clarity of terminology, notably in his *Introduction to Botany* and *Elements of Botany*, which represent, however, but small parts of his activity, and, like Daydon Jackson and other makers of glossaries, I have taken his work as a foundation. Lindley's books were written vigorously and with good sense, drawing upon extensive reading and experience, and they still repay consultation. In the year of his centenary I am happy indeed to take this opportunity of expressing gratitude both for the example of his life and for his achievements.

The tedious and time-consuming task of sorting thousands of slips

into alphabetical sequence, thus bringing together divergent uses of the same word, was greatly lightened by the help of my wife and my son. For much scholarly criticism and advice I am indebted to Mr. J. E. Dandy, the late Mr. N. Y. Sandwith and the late Mr. A. C. Townsend. My greatest debt is, however, to Dr. Hannah Croasdale of Dartmouth College, New Hampshire, U.S.A., who has for many years helped her fellow-workers in phycology to write their Latin descriptions and has made an extensive collection of useful expressions and phrases particularly relating to *Algae*. These notes, which she generously placed at my disposal, have called my attention to omissions from my vocabulary, suggested additional cross-references, and provided a check on information from other sources.

None of these kind helpers and encouragers is, of course, to be held responsible for the deficiencies of this book, which its unavoidably protracted and intermittent preparation may help to explain though not to excuse. As John Gerard wrote in the preface of his herbal of 1597, 'accept this at my hands (loving countrymen) as a token of my good will, trusting that the best and well minded will not rashly condemn me, although some thing have passed woorthie reprehension.'

W. T. S.

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#### PREFACE TO SECOND EDITION

The writing of his massive *Enthusiasm, a Chapter in the History of Religion* (1950) ended, Monsignor Ronald Knox looked back in 1949 over the thirty years or so of its haphazard preparation amid other tasks, when he must often have feared it would never be completed, and wrote of how 'The Book was what mattered—he had lived with it all these years, fondled it in his waking thoughts, used it as an escape from anxiety, a solace in long journeys, in tedious conversations. . . . The Book haunted his day-dreams like a guilty romance!' Knox, who had indeed written much else, then concluded, 'Do not doubt that one in my position feels, once again, the delicious tremors of first authorship; forgets his bibliography, and ranks in his own mind as *homo unius libri*'. So too it has been with *Botanical Latin*. Off and on, amid other tasks, this occupied the thoughts of its author over some twenty years before it achieved publication in 1966, but the first printing sold out in half as many months.

Since its subject, Botanical Latin, remains and will remain an important international medium for recording and naming plants new to science and since much information is available in no other language, the gratifying world-wide sale of *Botanical Latin* and requests for its re-issue indicate that it has indeed proved as convenient a guide as was hoped. For this new edition, changes have been made throughout with the minimum disturbance of the main text, mostly by the insertion of extra words in Chapters V and XXV and some references in the bibliographies of other chapters. These will help, it is hoped, to maintain the book's usefulness not only to botanists and gardeners but also to historians of science and classical scholars.

W.T.S.

JULY 1972

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**PART ONE**  
**INTRODUCTORY**

## CHAPTER I

### How to Use this Book

Botanical Latin is an international language used by botanists the world over for the naming and description of plants. Its use is obligatory only in descriptions of plants considered new to science, but little research can be done in systematic botany without recourse to earlier literature written in botanical Latin. Increasing scientific need during the past 250 years for precision and economy in words has made it distinct from classical Latin and it should be treated as such. The present book aims to supply a guide to its grammar, its standard procedures and peculiarities and its basic vocabulary, using examples taken from a wide range of botanical literature, in order that persons ignorant of classical Latin may nevertheless be able to extract the meaning from descriptions in botanical Latin and, if need be, draw up simple, clear and intelligible descriptions of their own. Part I is introductory; Part II deals primarily with grammar; Part III, with syntax; Part IV with vocabulary.

The reader having no knowledge of classical Latin must first of all become acquainted with the PARTS OF SPEECH detailed in Chapters V-XII and the concepts of GENDER, NUMBER and CASE (see pp. 59, 60). Examples of these are provided in the sentence *Haec species pulchra crescit maxime in pratis et locis graminosis inter frutices humiles* (This beautiful species grows especially in meadows and grassy places among low shrubs). Here the words *species* (species), *pratis* (meadows), *locis* (places) and *frutices* (shrubs) are NOUNS (see Chapter V), *haec* (this) a PRONOUN (see Chapter IX) adjectively used, *maxime* (especially) an ADVERB (see Chapter VII), *in* (in, on) and *inter* (among) PREPOSITIONS (see Chapter X), *et* (and) a CONJUNCTION (see Chapter XI), *pulchra* (beautiful), *graminosis* (very grassy) and *humiles* (low) ADJECTIVES (see Chapter VI). The endings of most of these words change according to the meaning intended; such words are said to be *inflected*. The nouns may be masculine, feminine or neuter in gender and this, together with their *number* (whether singular or plural) and *case* (whether nominative, accusative, etc.), controls their endings and the endings of their adjectives associated with them. Thus the word *species* used above is of feminine gender, singular number (since only one species is

mentioned here) and nominative case; the adjective *pulchra* associated with it is likewise of feminine gender (hence not masculine *pulcher* or neuter *pulchrum*), singular number and nominative case. The nouns *pratis* and *locis* are of plural number and ablative case, their nominative singular forms being respectively *pratum*, which is neuter, and *locus*, which is masculine. *Frutices* is here the accusative plural form of *frutex*, which is masculine; the associated adjective *humiles* (of which the masculine nominative singular is *humilis*) agrees with *frutices* in gender, number and case. *Crescit* (it grows) is a VERB (see Chapter XII) agreeing in number with *species*. This example will serve to indicate the complexities of a highly inflected language such as Latin, complexities which, however, lead to clarity.

The VOCABULARY (see Chapter XXV) of botanical Latin is very rich, and a knowledge of it can only be acquired through experience. A useful exercise is to take some descriptions and diagnoses by the botanists mentioned in Chapter II and translate them into English, then later, by use of the Vocabulary, translate them back into Latin. It will be noticed that in a diagnosis such as *pileo 2 cm. lato glabro viridi, stipite 10 cm. longo fistuloso maculis albis consperso, lamellis viridibus liberis, sporis fusiformibus laevisbus* (with the pileus 2 cm. broad glabrous green, the stipe 10 cm. long fistular with white spots sprinkled, the lamellae green free, the spores fusiform smooth) many of the words end in *-o*, *-is* and *-ibus*; these indicate that it is written in the ablative case. Words, however, are listed in dictionaries and glossaries under their nominative form, e.g. under *pileus* (not *pileo*), *latus* (not *lato*), *glaber* (not *glabro*), *viridis* (not *viridi*), *stipes* (not *stipite*), *lamella* (not *lamellis*). The part of the word to which such case-endings are attached is known as its *stem* (see p. 60), e.g. the stem of *pileus* (nominative) and *pileo* (ablative) is *pile-*. Since words with the ablative singular ending, for example, in *-e* and the ablative plural in *-ibus* may have the nominative singular ending in *-en* (e.g. *lichen*), *-er* (e.g. *elater*), *-o* (e.g. *sectio*), *-or* (e.g. *odor*), etc., it is impossible to deduce the nominative singular from the ablative. Hence a given word should be sought in the Vocabulary by its stem rather than by the whole word when not in the nominative case.

Nouns are classified into five main groups or *declensions*, each with a distinctive set of case-endings. The Roman numeral I, II, III, IV or V indicates the declension to which a given noun belongs, the letter *m* (masculine), *f* (feminine) or *n* (neuter) its gender. By reference to Chapter V the correct form to express a particular meaning can easily be found. Adjectives are classified into two main groups indicated by the letters A and B in the Vocabulary. If a particular adjective is to go with, say, a feminine noun of plural number and

ablative case, then the feminine plural ablative form of that adjective should be ascertained by reference to Chapter VI. The Vocabulary provides many phrases ready-made which can be adopted or adapted.

A reader intending to describe a plant in Latin should turn to Chapter XIII for examples of DIAGNOSES setting out briefly distinguishing features, to XIV for examples of DESCRIPTIONS stating characters in general, to XV for notes on PUNCTUATION, to XVI for information about HABITATS. In consulting the older literature to check that the plant has not been described and named already, he may find type-localities and distribution there stated in Latin or Latinized GEOGRAPHICAL NAMES, for which see Chapter XVII.

To provide a new plant with an apt name not already used becomes more and more difficult as more and more names are published. WORDS OF GREEK ORIGIN are just as likely as Latin ones to be pre-occupied. For their formation see Chapters XIX and XX. If these and the Vocabulary do not provide enough material, Roland Wilbur Brown's *Composition of scientific Words* (1956) should be consulted for suggestions, together with Oscar E. Nybakken's *Greek and Latin in scientific Terminology* (1960); in any event, checking with Liddell and Scott's monumental *A Greek-English Lexicon* (new ed. 1940) is advised; for this an acquaintance with the Greek alphabet (see p. 261) is essential. Dictionaries of foreign equivalents should always be used both ways, as a word in one language often has a different range of meaning from a more or less equivalent word in another.

The VOCABULARY (Chapter XXV) of this book is essentially one of botanical Latin and English equivalents and only incidentally explains their meaning and application; this, however, is the function of Chapter XXII, which provides basic Latin-English DESCRIPTIVE TERMINOLOGY taken from Lindley, and of such works as G. W. Bischoff's *Wörterbuch der beschreibenden Botanik* (2nd ed., 1857), J. Lindley's *The Elements of Botany* (1849), A. Gray's *The Botanical Text-Book* (6th ed., Part I, 1879), B. D. Jackson's *A Glossary of botanic Terms* (4th ed., 1928), W. H. Snell and E. A. Dick's *A Glossary of Mycology* (2nd ed., 1971), and the glossaries accompanying many Floras. Moreover it does not set out to state the meanings of specific epithets, although many are incidentally included. For these G. F. Zimmer, *A Popular Dictionary of botanical Names and Terms* (1912), C. A. Backer, *Verklarend Woordenboek van wetenschappelijke Plantennamen* (1936), H. Gilbert-Carter, *Glossary of the British Flora* (3rd ed., 1964) and A. W. Smith and W. T. Stearn, *A Gardener's Dictionary of Plant Names* (1972), may be consulted.

## CHAPTER II

## Introduction

*Sic enim potius loquamur: melius est reprehendant nos grammatici quam non intelligent populi* [Let us rather then declare: it is better that the grammarians censure us than that the public does not understand us].

ST. AUGUSTINE OF HIPPO (A.D. 354-430)  
*Ennar. in Psalm. cxxxviii, 20*

‘Those who wish to remain ignorant of the Latin language, have no business with the study of Botany.’ So wrote John Berkenhout in 1789. A letter to the *Cambridge Review* of 29 January 1960 by E. J. H. Corner gives its modern echo: ‘We botanists keep Latin alive. We read it, write it, type it, speak it when mother tongues fail, and succeed in putting such remarkable things as orchid-flowers and microscopic fungi into universal understanding through Latin. If we didn’t, the Babel of tongues and scripts would close our accord, and we should be at the mercy of politics! We have, in fact, our international language; it is so far evolved that it is almost as different from classical Latin as modern from Chaucerian English.’ Although all too little appreciated, the international importance of botanical Latin and its divergence from classical Latin have indeed often been noted. ‘Le latin des botanistes n’est pas cette langue obscure et à réticences de Tacite, obscure et à périodes pompeuses de Cicéron, obscure et à grâces tortillées d’Horace’, wrote Alphonse de Candolle in 1880, ‘Ce n’est pas même la langue plus sobre et plus claire d’un naturaliste, tel que Pline. C’est le latin arrangé par Linné à l’usage des descriptions et, j’oseraï dire, à l’usage de ceux qui n’aiment ni les complications grammaticales, ni les phrases disposées sens dessus dessous.’ To learn it, said this distinguished Swiss botanist, was the work of a month for an Italian, two months for a Frenchman, three for an Englishman, four months for a German or Swede not already familiar with a language of Latin origin. Once acquired it is a valuable working tool, opening stores of taxonomic information not otherwise available.

Botanical Latin is best described as a modern Romance language of special technical application, derived from Renaissance Latin with much plundering of ancient Greek, which has evolved, mainly since

1700 and primarily through the work of Carl Linnaeus (1707-78), to serve as an international medium for the scientific naming of plants in all their vast numbers and manifold diversity. These include many thousands of plants unknown to the Greeks and Romans of classical times and for which names have had to be provided as a means of reference. Their description necessitates the recording of structures often much too small for comprehension by the naked eye, hence unknown to the ancients and needing words with precise restricted applications foreign to classical Latin. The use of a modified form of Latin for purposes so remote from classical literature is a consequence of the survival of Latin as a general-purpose language, used in academic, diplomatic, ecclesiastical and legal affairs and even domestic correspondence, long past the crucial period of the sixteenth century when herbalists became aware of the many hitherto unnoticed and unnamed plants around them. They wrote in Latin about these plants because they wrote in Latin about almost everything else. Latin, admittedly derived from the medieval Latin, was then the ordinary generally understood language of educated men. Such indeed it remained all through the eighteenth century. It served not only for international communication, as between Linnaeus and his foreign correspondents, and between Albrecht von Haller (1708-77) and his foreign correspondents, but also for private correspondence between scholars of the same language, possibly because few women then could read Latin. Thus Haller and his friend Johannes Gessner (1709-90), although both German-speaking Swiss, conducted their extensive life-long correspondence in Latin. Study of Latin then began early and led to great fluency in later life. Elias Magnus Fries (1794-1878), the ‘founder of modern systematic mycology’, tells a little about his own education<sup>1</sup> in his *Historiola Studii mei mycologii* (1857). At the age of twelve when gathering strawberries in a wood he found an unusually large specimen of a fungus (*Hydnus coralloides*), which induced him to begin the study of fungi. He tried to ascertain its name with the aid of Liljeblad’s *Utkast til en Svensk Flora* (1792 and 1798), but was soon tripped up by an unknown word *lamella*. ‘Shortly afterwards, when out walking with my father, I asked: *Dic, Pater, quid est lamella?* (with my father I was allowed to talk only in Latin, whereby I learned Latin before Swedish). *Lamella*, he replied, *est lamina tenuis*, which explanation given made this term for the fructification of agarics seem particularly apt. . . . Two men especially lit up and fostered my

<sup>1</sup> The Latin education of Nils Retzius (1712-57) was rather similar to that of Fries; according to Linnaeus, *Skånska Resa*, 92 (1751), entry of 23 May 1749, when Retzius was about seven or eight years old his tutor spent a year teaching him a Latin vocabulary and then for the next two years allowed him to speak nothing but Latin; thereafter he read Latin authors and conversed in Latin with ease.

studies, the luminaries of Lund botany, one setting (A. J. Retzius), the other rising (C. A. Agardh). . . . From the latter I received Persoon's *Synopsis Fungorum* to make use of, which I soon learned from end to end, from the former Albertini [and Schweinitz's], *Conspectus Fungorum [in Lusatiae superioris] Agri niskiensis [Agro niskiensi crescentium]*, which book taught me knowledge of more things than any other' (cf. *Friesia*, 5: 141-143; 1955).

It was natural for men thus reared upon Latin as a living language to use this in their scientific work as well as other matters and to treat it in a free and easy manner, modifying and extending it to meet their needs. From being thus customary and traditional, Latin has now become obligatory for certain botanical purposes. No botanist, however learned, can have a reading knowledge of all the modern languages (said to be about 3,000) from Icelandic and Israeli Hebrew to Burmese, Malay, Chinese and Japanese in which descriptions of new plants might be published. As Linnaeus said as long ago as 1737, when national pride leads individuals to write of their discoveries in their own languages alone, 'the novice may grow old over his literary studies before he is competent to study the sciences' (*Crit. bot.*, no. 229). Moreover, there is no other language in which so much fundamental information of systematic botany, representing an enormous and hard-won grasp upon the facts of the natural world, is recorded. 'Its roots take hold too firmly on the kingdoms of the dead', as Helen Waddell has written of medieval Latin, for it to be discarded. The loss would be too great. Successive international botanical conferences have accordingly decreed its maintenance. A rule (Article 37) of the *International Code of Botanical Nomenclature, 1959* (1961) states that 'in order to be validly published, a name of a new taxon of plants, the bacteria, algae and all fossils excepted, published on or after 1 January 1935 must be accompanied by a Latin diagnosis [i.e. a statement in Latin of characteristics] or by a reference to a previously and effectively published Latin diagnosis' and that 'a name of a new taxon of algae published on or after 1 January 1958 must be accompanied by a Latin diagnosis or by a reference to a previously and effectively published Latin diagnosis'. This rule is scrupulously honoured by most botanists of all nations who thus form an empirical language community, as described by Karl Vossler (*The Spirit of Language in Civilization*, 1932), 'held together by the will to work at a common language material as the special instrument of mutual understanding'. New names published contrary to article 37 are ignored or rejected; they become valid only when provided with a published Latin definition or description of the plant's features. The earlier article 36 of the *Règles internationales pour la Nomenclature botanique, 1905* (1906), namely that 'on or after

1 January 1908, the publication of names of new groups will be valid only when accompanied by a Latin diagnosis', was disregarded by followers of the now obsolete *American Code of Nomenclature* (1907). The probability that new names might be accompanied by descriptions only in Asiatic and African languages was beyond their vision. Experience since 1905 has made the utility of such a rule so evident that the defence of Latin as the one obligatory language for the description of new taxa of plants comes as strongly from Slavonic and Scandinavian botanists as from those of Latin countries. The property of no one nation or linguistic group, Latin has, in consequence of its neutrality, become world-wide. Even if political considerations did not now prevent the adoption of, say, Chinese, English, Russian or Spanish as the *one* international language for the descriptions of new taxa, agreement on one of these would nevertheless not spare research workers in systematic botany the necessity of learning botanical Latin in order to get first-hand information from past work.

The number of original descriptions and diagnoses of plants in Latin certainly exceeds 400,000. Moreover, many standard comprehensive works giving information not elsewhere readily accessible or else important as starting points of nomenclature are in Latin. Among these are J. G. Agardh, *Species, Genera et Ordines Algarum* (1848-98), Bentham & Hooker, *Genera Plantarum* (1862-83), Blume, *Flora Javae* (1828-58), Bornet & Flahault, *Révision des Nostocacées hétérocystées* (1886-88), Brown, *Prodromus Florae Novae Hollandiae* (1810), de Candolle, *Prodromus* (1824-69), De Toni, *Sylloge Algarum* (1889-1907), Endlicher, *Genera Plantarum* (1836-41), Fries, *Systema Mycologicum* (1821-32) and *Lichenographia Europaea* (1831), Gomont, *Monographie des Oscillariées* (1892-93), Halácsy, *Conspectus Florae Graecae* (1900-12), Hayek, *Prodromus Florae Peninsulae Balcanicae* (1924-33), Hedwig, *Species Muscorum* (1801), Hooker, *Flora Boreali-Americanæ* (1829-40), Kunth, *Nova Genera et Species Plantarum* (1816-25), Ledebour, *Flora Rossica* (1841-53), Linnaeus, *Species Plantarum* (1753) and *Genera Plantarum* (5th ed., 1754), Martius, *Flora Brasiliensis* (1840-1906), Miquel, *Flora Indiae Batavae* (1855-9), Persoon, *Synopsis Plantarum* (1805-7), C. B. Presl, *Tentamen Pteridographiae* (1836), Saccardo, *Sylloge Fungorum* (1882-1931), Spruce, *Hepaticæ Amazonicae et Andinae* (1884-85), Urban, *Symbolae Antillanae* (1898-1928), Webb & Berthelot, *Phytographia Canariensis* (1836-50), Willkomm & Lange, *Prodromus Flora Hispanicae* (1861-93), the monographs in de Candolle's *Monographiae Phanerogamarum* (1878-93), and Engler's *Das Pflanzenreich* (1900 onwards), as well as numerous independent monographs. Moreover, certain periodicals, notably Engler's *Botanische Jahrbücher*, Fedde's *Repertorium Specierum Novarum*, Hooker's

*Icones Plantarum*, *Hedwigia* and the *Kew Bulletin*, contain many hundreds of descriptions in Latin. There is no shortage of models for those who will take a little trouble to find them.

Botanical Latin could never have been continuously employed for the description of such a diversity of plants but for its progressive development. This has involved the incorporation of a host of terms unknown in classical Latin, e.g. *acarodomatum*, *achenium*, *androecium*, *anthela*, *ascus*, *basidium*, *calyptra*, *mycelium*, *ovarium*, *ovulum*, *perigonium*, *sepulum*, *tepalum* etc., and the use of many classical Latin words with new specialized meanings or with meanings remote from their original usage, e.g. *amentum*, *bractea*, *calyx*, *corolla*, *pileus*, *stigma*, *stipula*, *velum* (see Chapter III). Side by side with such shifts of application and with enrichment by coinage and taking from other languages, notably Greek, has come a simplification of grammar. In these respects its development has paralleled that of other derivatives from Latin. It illustrates in a small way that relation of science to language picturesquely described by Karl Vossler: 'Science castigates and enriches, conserves and accelerates, prunes and sharpens, obstructs and drives forward linguistic thought in the service of the logos, which it rapes, deprives of its naiveté and enriches instead with innumerable children' (*The Spirit of Language in Civilization*, 1932). No science can advance without forming a specialized vocabulary economical and precise in designating things and concepts; just as the lack of a suitable word hampers discussion, so the provision of one often leads to better understanding of the object or concept concerned; the history of Webber's term 'clone' (*clon*; cf. Stearn, 1949, 1961)<sup>1</sup> provides one example among many. It is to Latin and Greek that those concerned with word-making have mostly turned for material. Although Latin itself has long ceased to be for the botanist 'that universal language which opens to him all the botanical books published in every part of the world', as John Berkenhout described it in 1789, it provides many of the terms used in morphology, anatomy, cytology, physiology, ecology and phytogeography. It no longer serves, however, as the vehicle in which their concepts, ideas, opinions and observations are recorded and discussed. Its function has gradually become almost entirely nomenclatural and descriptive. This limitation of use has made it possible to eliminate from botanical Latin many of the complexities of classical Latin and to impose upon it an easily learned formal style which makes for ease of consultation. It has acquired its own conventions, its own idioms.

The general effect of all this has been to make botanical Latin

<sup>1</sup> W. T. Stearn, 'The use of the term clone', *J. Royal Hort. Soc.*, 74: 41-47 (1949), 'Clone', *P. Gray, Encycl. Biol. Sci.*, 241-243 (1961).

autonomous. It is now as unintelligible to classical scholars as modern English would be to a Frenchman who had learned only Anglo-Saxon. So simple and, to a botanist, self-explanatory a botanical Latin diagnosis as *species scapo conspicue bracteato pubescenti, petalis glandulosis, antheris gynoecio paulo longioribus* treated as classical Latin could be translated as 'kind with the stem conspicuously glistening like gold and reaching the age of puberty with the thin metal plates full of kernels, with the medicines made from flowers a little longer than the woman's apartment', portraying a plant worthy of Edward Lear's *Nonsense Botany*. Botanical Latin is admittedly an artificial language, but then, as stated by L. R. Palmer, 'from its beginning to its end the written Latin language in all its forms is an artificial language'. No more to be regarded as corrupt classical Latin than modern Italian, botanical Latin is an enriched and specialized derivative of the Latin which scholars wrote in the sixteenth century and which in turn was a reformed version of medieval low Latin inspired by the brief Golden Age (81 B.C.-A.D. 14) of classical Latin literature. To discard the medieval legacy and numerous accepted neologisms gathered into botanical Latin during its past three centuries of development would be to destroy those very features from which it derives its utility as an international means of communication. Recognition of its linguistic independence cuts out the need even to consider this.

The relation of botanical Latin to classical Latin is that of a former dependency which by vigorous economic growth over many years has established traditions and divergencies arising out of its special conditions and history that must be accepted, if need be, by proclaiming its status as a language in its own right. From this it follows that there is no good reason to change under pretence of reform the standard spellings and procedures of Latin as used by botanists to make them conform to those of classical Latin. The latter are indeed to be rejected as archaic and incorrect in botanical Latin. Thus *acris* (m.), *palustris* (m.), *laevis*, *laevigatus*, *annulus*, *bacca* and *sylva*, for example, are correct in botanical Latin, *acer* (m.), *paluster* (m.), *levis*, *levigatus*, *anulus*, *baca* and *silva* preferable in classical Latin.

Ben Jonson's posthumous *Timber: or Discoveries made upon Men and Matter* (1641) under the heading 'Consuetudo' sets down neatly the crux of the matter: 'Custome is the most certaine mistresse of language, as the publike stamp makes the current money. . . . The eldest of the present and newest of the past language is the best. For what was the ancient language, which some men so doate upon, but the ancient custome? yet when I name custome, I understand not the vulgar custome . . . but that I call custome of speech, which is the consent of the learned; as custome of life, which is the consent of the good.'

In this book 'the consent of the learned' is taken to be fairly consistent usage by nineteenth-century botanists of acknowledged scholarship. The list of such men to whose works later botanists can well turn for guidance in the skilful handling of Latin is a long one. They include Augustin Pyramus de Candolle (1778–1841), Camille Montagne (1784–1866), Carl Sigismund Kunth (1788–1850), Antoine L. A. Fée (1789–1874), Philip Barker Webb (1793–1854), Karel Boriwog Presl (1794–1852), Carl F. P. von Martius (1794–1868), Elias Magnus Fries (1794–1878), George Bentham (1800–84), Alexander von Bunge (1803–1890), Miles Joseph Berkeley (1803–89) who checked the latinity of Bentham & Hooker's *Genera Plantarum*, Stephan Ladislaus Endlicher (1804–49), Alphonse de Candolle (1806–93), Friedrich Traugott Kützing (1807–93), Edmond Boissier (1810–86), Louis René Tulasne (1815–85) and Charles Tulasne (1816–84), Joseph Dalton Hooker (1817–1911), Richard Spruce (1817–93), Heinrich Moritz Wilkomm (1821–95), Georg Heinrich Mettenius (1823–66), Carl Johann Maximowicz (1827–91), Ludwig A. T. Radlkofer (1829–1927), Franz Stephani (1842–1927), Adolf Engler (1844–1930), Pier Andrea Saccardo (1845–1920), Georg Hieronymus (1846–1921), Giacomo Bresadola (1847–1929), Ignaz Urban (1848–1931), Viktor Ferdinand Brotherus (1849–1929), Edvard August Vainio (1853–1929), Alexander Zahlbrückner (1860–1938), Gustaf O. A. Malme (1864–1937) and others whose output in Latin though of high quality was smaller. Specialists could easily extend such a list. These men not only wrote extensively in Latin; what they recorded in it remains important. A number of them were steeped in the classics. Modern taxonomy being built upon their publications, it obviously makes for consistency and ease of communication to maintain a continuity with their work by using the same expressions and adopting the same style and orthography when relevant and apt.

The care needed to draw up a description in Latin is often in itself an aid to exact description in the writer's mother tongue, wherein an expression may possibly bear several meanings each with a different Latin equivalent; the act of translation reveals ambiguities and forces the writer to become clear in his own mind as to what the original means. Radlkofer in his great work on the *Sapindaceae*, published posthumously 1931–34, described some 140 genera and 2,000 species in Latin. 'I well remember,' wrote Theodor Herzog, 'how Radlkofer, drawing up his Latin diagnoses with a total disregard of the time consumed, would often spend a quarter of an hour in searching for the most apt expression surpassing all others in exactness.' Nevertheless Radlkofer covered over 1,400 pages with them. Those who lack this perfectionist zeal can profit from it by adapting the carefully drafted

descriptions of their predecessors to their own use. Unfortunately neglect of such readily available models is all too evident in some modern descriptions.

Reviewing David Don's *Prodromus Florae Nepalensis* (1825), John Lindley said it is 'written in so strange a language, that we can scarcely guess its name, unless, indeed, it be a specimen of some new kind of Latin which may be written "with great facility, after three lessons of an hour each", without the incumbrance of previous education' (*Bot. Reg.*, 11: sub t. 872: 1825). Don's work is, however, polished by comparison with some descriptions published in 1962 in which *herbae lignae inferior*; *ramuli annulares*; *ramuli radicantes tangentes terra*; *dens laterales clarissimae*; *radix superioris* is supposed to mean, according to its author, 'herbs woody at soil level; branches annual; branches rooting in contact with the soil; lateral teeth distinctly subtending; radicle superior', and *frutices roundate*,  $\frac{1}{2}$  *lignei ad monei lignei*; *laminæ linearis ad oblanceolate*; *bracteæ fructeæ pedicelles ad 4 mm.*, *ovoidales*, *cum 4 pennis* 'rounded shrubs, the lower  $\frac{1}{2}$  woody to woody throughout; blades linear to oblanceolate; fruiting bracts on pedicels to 4 mm. long, ovoid, bearing 4 wings'! The plants to which these words refer are members of a family which received much attention from Moquin-Tandon, Fenzl and Bunge among others. Study of descriptions by his learned predecessors would have helped the author to make his own descriptions more in keeping with the need of science for intelligibility and accuracy.

## CHAPTER III

# Development of Botanical Latin Terminology

Origin of botanical Latin, p. 14—Influence of Linnaeus, p. 15—Beginnings of plant morphology by Theophrastus, p. 17—Beginnings of plant description by Theophrastus, p. 18—Pliny the Elder and Isidorus, p. 21—Albertus Magnus and Rufinus, p. 23—Valerius Cordus and Fuchs, p. 26—Malpighi, Camerarius, Jung, Ray and Tournefort, p. 29—Sébastien Vaillant, p. 33—Linnaeus's reform of terminology, p. 34—Linnaeus's reform of plant description, p. 37—Botanical Latin names of floral parts, p. 39—Influence of glossaries, p. 43—A. P. de Candolle, Lindley and Asa Gray, p. 44—Summary, p. 46—References, p. 47.

### ORIGIN OF BOTANICAL LATIN

Botanical Latin derives from the Latin of the Roman writers about plants, notably Pliny the Elder (A.D. 23–79). It accordingly owes its existence to the survival of Latin through the Middle Ages and its retention at the Renaissance and well into the eighteenth century as the one internationally used language of learning among the peoples of Europe, none of which then possessed a vernacular language sufficiently developed and widely enough known to challenge its supremacy in diplomatic, legal and ecclesiastical matters. Had Latin lost this supremacy before the end of the sixteenth century, there would probably be no one international system of botanical nomenclature today, for its use by herbalists and botanists in the sixteenth century established the tradition inherited by the founder of modern botanical nomenclature, Carl Linnaeus (1707–78), that all plants should be given Latin names, or at any rate names of Latin form, independent of local vernacular names, and that works relating to them should also be in Latin. Thus, during the period when scholars interested in plants were few in every country, their use of Latin counteracted their geographical isolation. Written in their own vernaculars, their works would have been largely unread, unknown and ineffective, for the development of any science is necessarily a co-operative effort; in Latin these became direct contributions to a common European pool of learning. Linnaeus owed his scientific career largely to a knowledge

of Latin. In turn, botanical Latin owes its present utility, together with its divergence from classical and medieval Latin, largely to Linnaeus. Pliny the Elder, resurrected in the year 1601, would probably have understood without great difficulty the plant descriptions in the just published *Rariorum Plantarum Historia* of Charles de l'Écluse (Carolus Clusius, 1526–1609). Transferred to the nineteenth century, he would have found unintelligible or have grossly misunderstood the detailed and technically excellent descriptions in botanical Latin by such eminent scholars as Antoine L. A. Fée (1789–1874), Philip Barker Webb (1793–1854) and Stephan Ladislaus Endlicher (1804–49), all well versed both in the classics and in botany.

### INFLUENCE OF LINNAEUS

This development away from classical Latin in the eighteenth and early nineteenth centuries reflects the progress of formal plant description during that period. As European expansion overseas made known more and more diverse nameless plants, and improved optical aids revealed ever more complex and varied details of structure for which no terms existed in any language, Latin had either to be adapted and extended so that such plants could be given internationally acceptable Latin names and their characters clearly and accurately recorded, or it had to be abandoned for botanical purposes. For Linnaeus indeed there was no choice. Using Latin in works of such importance as his *Genera Plantarum* (1737; 5th ed., 1754; 6th ed., 1764), *Critica botanica* (1737), *Flora Lapponica* (1737), *Hortus Cliffortianus* (1738), *Philosophia botanica* (1751) and *Species Plantarum* (1753; 2nd ed., 1762–63; 3rd ed., 1764), which otherwise he could have written only in Swedish, Linnaeus made his principles and methods immediately usable all over Europe. Moreover, by associating them with an acceptable Latin terminology and applying them in encyclopaedic works which botanists had of necessity to consult (for nowhere else was so much information about the kinds of plants to be found so methodically and conveniently assembled) he established a simplified form of Latin as the international language for the formal naming and description of plants. The Romans possessed many words relating to conspicuous plant structures (cf. André, 1956; Sprague, 1933; Stearn, 1955), notably those of economic use, but lacked precise terms for the parts of the flower, which received little attention before the proof of sexuality in plants at the end of the seventeenth century. It was, however, upon these floral parts that Linnaeus built his 'sexual system' of classification and rather than himself coin entirely new words he had to adapt classical Latin words to his purpose. He took, for example, a word

such as *corolla*, meaning in classical Latin 'a little crown or garland', and applied it exclusively to the showy inner envelope of the flower surrounding the sexual organs for which there then existed no convenient unambiguous collective term. In this way, by stipulative definition,<sup>1</sup> which is an essential process in the development of any science, Linnaeus provided botany with a Latin terminology of great utility, deceptively like classical Latin in appearance, remote indeed from it in spirit and meaning. He created what was virtually a new Latin botanical language at the very time that the Italian philologists and lexicographers Jacopo Facciolati (1682–1769) and Egidio Forcellini (1688–1768) were purging Latin of its medieval *verba barbara* and ascertaining ancient usage. Thus has come the great cleavage between Latin as used by botanists and Latin as interpreted by classical scholars.

Following Linnaean precedent, botanical Latin has continued to simplify the grammar of classical Latin and to give to many Latin words restricted and precise meanings often markedly different from those of Roman times; moreover, it has elaborated its vocabulary by adding numerous loan-words and modern compounds. These innovations are, as John Brand pointed out in 1797, essentially of the same kind as the Romans themselves made when they needed terms to express matters outside their everyday experience. Thus Cicero himself put into the mouth of Varro, 'the greatest critic and grammarian of the Augustan age', the statement that to unusual subjects one could apply words which had not been in use, and that if Latin could not furnish them recourse could be made to Greek, since to new things new names must be given or those of others transferred to them (*aut enim nova sunt rerum novarum facienda nomina aut ex aliis transferenda*); according to Weise (1893), Varro himself took some 200 words from Greek. Thanks to such action, botanical Latin has remained an important tool of systematic botany, a language in which even the characteristics of microscopic organisms studied on culture media (see pp. 168, 174) or with the aid of the electron microscope (see pp. 158–161) can be expressed. This is indeed a remarkable linguistic achievement. 'Call it dog-Latin if you will', R. A. Knox wrote in

<sup>1</sup> The essential and constant element of *stipulative definition* is, in the words of Richard Robinson (1950), 'the element of deliberate, arbitrary, self-conscious choice of name for a certain thing or a thing for a certain name. . . . Whether this individual choice agrees with or differs from the common usage of the word defined and whether there is any common usage of it or not is irrelevant to the essence of stipulation. A stipulative definition may vary, in this respect, all the way from stipulating an entirely novel name as the name of an entirely novel thing to merely confirming and adopting common usage.' It is to be distinguished from *lexical definition*, which states how words have been used and which may supply the material for stipulative definition as it did to Linnaeus. Reference should be made to Robinson's instructive and lucid essay, *Definition* (1950), notably his Chapter 4.

1923 of ecclesiastical Latin, 'there remains a proverb which tells us that a living dog is better than a dead lion, and the difference between the dog-Latin of St. Jerome and the lion-Latin of Cicero is the difference between a living and a dead language.' The same is true of botanical Latin. To assume that a grounding in classical Latin alone will prove adequate for its understanding is to risk much error and misinterpretation.

#### BEGINNINGS OF PLANT MORPHOLOGY BY THEOPHRASTUS

The inadequacy of classical Latin by itself as a language for modern botanical use reflects the limited botanical knowledge and needs of the Roman world. The herb-gatherers or *rhizotomi* of antiquity undoubtedly possessed a wide acquaintance with plants having reputed medicinal value. Thus when we speak in English of anemones, asparagus, crocuses, cyclamens, delphiniums, gentians, lilies, peonies, roses, violets, etc., or of the genera *Achillea*, *Cassia*, *Daphne*, *Narcissus*, *Solanum*, *Viola*, etc., we use names which have come to us with little or no change from the everyday speech and herbalist jargon of ancient Rome and Magna Graecia. Such an extensive vocabulary as is preserved in the works of Pliny the Elder (cf. André, 1956) and Pedianos Dioscorides (cf. André, 1959; Stadler, 1898, 1900; Stromberg, 1940), indicates the ability to distinguish and recognize many plants, but this memorizing of the habit of growth of plants is rarely associated with an interest in their structure deep enough to make the detailed comparisons and the generalizations which bring forth a scientific terminology for their different parts. That is essentially the task of a philosopher rather than a herbalist. It seems to have been first undertaken by Aristotle's disciple and successor Theophrastus of Eresos (370–c. 285 B.C.). He inherited the botanic garden which Aristotle had founded at Athens and here, brooding over the characteristics of some five hundred or so kinds of plants, he arrived at basic concepts of plant morphology which stood essentially unchanged and scarcely enlarged for some nineteen centuries after his death until the development of lenses and the microscope revealed the functions and intimate structure of the flower, using that term in its modern sense as including the calyx and gynoecium as well as the corolla and androecium.

To Theophrastus and his followers for many centuries, indeed up to the seventeenth century A.D., the flower (*ἀνθός*, *flos*) was the assemblage of organs, essentially leaf-like in almond, apple, pear and plum, but 'hair-like' in grape, mulberry and ivy, which surrounds the

organ (the gynoecium of modern botany) that later becomes the fruit or seed. His recognition of these as comparable, despite their great difference in appearance, gave 'to the term *ἀνθός*, flower, a new definition, a scientific one. The term must (henceforth) embrace whatever is intimately though transiently connected with a fruit-germ, whether laminal and coloured or filamentose and greenish. This, in so far as written records show, is the earliest proposition ever laid down concerning the morphology of the flower; and it was a mighty contribution to scientific botany' (E. L. Greene, 1909). Of Theophrastus's insight and knowledge his two books *De Causis Plantarum* and *De Historia Plantarum* supply many examples, discussed at length by E. L. Greene (1909: 52-142) and by Gustav Senn (1928-43) and summarized by Agnes Arber (1950: 11-23). It may suffice to mention his recognition of the pinnate leaves of ash (*Fraxinus*), mountain ash (*Sorbus*) and elder (*Sambucus*) as leaves comparable with simple leaves and his use of the new word 'pericarp' (*περικαρπίον*, apparently coined by him or Aristotle) to designate the protective covering around the seeds, whatever its diversity of form and texture. These concepts could not, however, advance satisfactorily beyond the evidence supplied by naked-eye observation. Thus a limit was set to the enrichment of ancient Greek and classical Latin with botanical terms and expressions adequate for modern use.

#### BEGINNINGS OF PLANT DESCRIPTION BY THEOPHRASTUS

For those plants which attracted attention by their beauty, economic use or peculiarities, Theophrastus used the current Greek names; the rest he left nameless. He certainly did not set out to describe and name all the plants of his adopted Attica. He nevertheless described a number with remarkable skill. As an example may be quoted his description of the European hop-hornbeam (*Ostrya carpinifolia*: *δοτρύνα*; Fig. 1): 'It is similar to the beech in growth and bark; the leaves are shaped like a pear's at the base but they are much longer, narrowed to a point, and larger, and have many fibres, which stretch out like ribs from a central straight large fibre and are thick; moreover the leaves are wrinkled along the fibres and have a finely incised edge; the wood is hard, colourless and white; the fruit is small, oblong and yellow like barley; it has shallow roots; it loves water and is found in ravines' (translation by A. Hort, 1916). This description was composed in the infancy of botany, over 2,000 years ago. The description of the same tree appearing in a standard modern work, Alfred Rehder's *Manual of cultivated Trees and Shrubs* (2nd ed.,

1940), is as follows: 'Tree to 20 metres; bark gray; young branchlets pubescent: leaves ovate to ovate-oblong, acuminate, usually rounded at base, sharply and doubly serrate, 4-10 cm. long, dark green and sparingly hairy above, sparingly hairy chiefly on the nerves beneath,

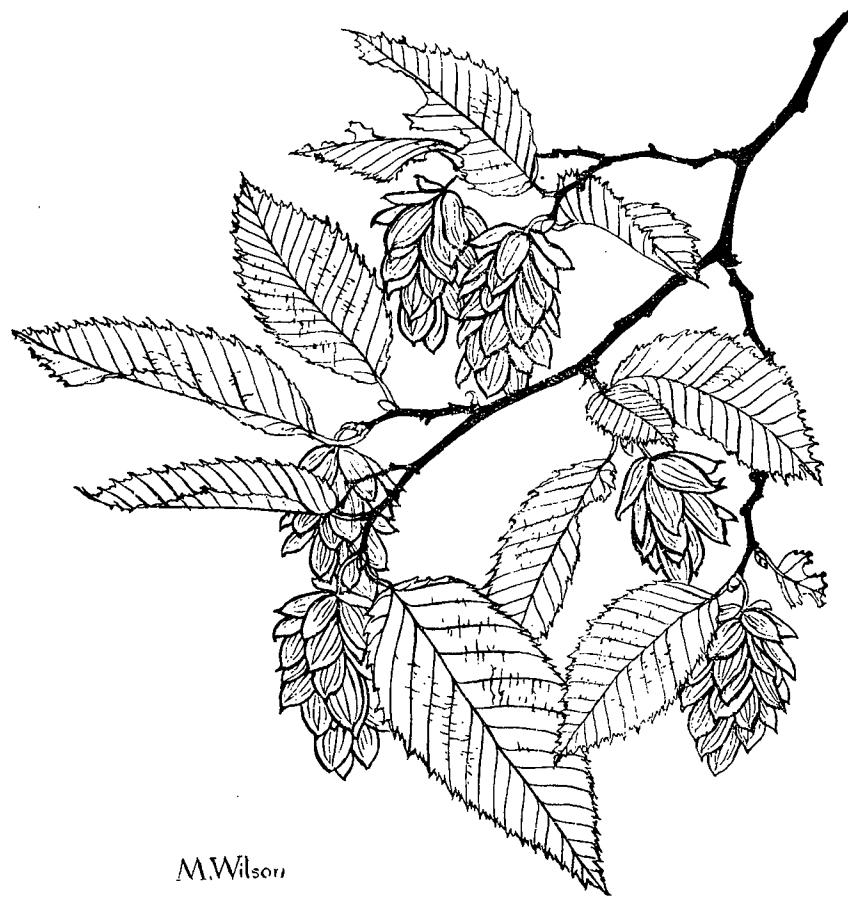


Fig. 1 *Ostrya carpinifolia* Scopoli; Hop-hornbeam  
(Drawing by Maurice Wilson)

with 12-15 pairs of veins; fruiting clusters 3.5-5 cm. long; nutlet ovoid, 4-5 mm. long, with a tuft of hairs at the apex.' The order of these two descriptions is essentially the same and so is the content. The superiority of the modern description lies chiefly in its use of measurements.

Rehder states that this *ostrya* is a tree up to 20 metres high with grey bark. Theophrastus states that it is like the beech, which is a tree

well known for its grey bark and also 20 metres or more high. Rehder notes that the leaf has 12–15 pairs of side veins; Theophrastus does not mention their number but says that they are many and stout. Rehder mentions hairiness, which is scarcely visible without a lens, but says nothing of the corrugated or wrinkled surface noted by Theophrastus. Rehder describes the leaf-shape in technical terms, 'ovate to ovate-oblong, usually rounded at base'; Theophrastus compares it to that of the pear leaf (noting, however, certain differences), which answers to this description.

In some respects Theophrastus's account is here superior to Rehder's, since it includes facts of economic and ecological interest, namely that the wood is hard and whitish and that the tree loves moisture and grows in ravines. To convey his detail Theophrastus had to make comparisons with better-known plants or objects, i.e. beech, pear and barley, and the ribs of an animal, and this is his general method. Thus in his celebrated description of the sacred lotus (*Nelumbo nucifera*; Fig. 2), to which Cesalpino and more recently

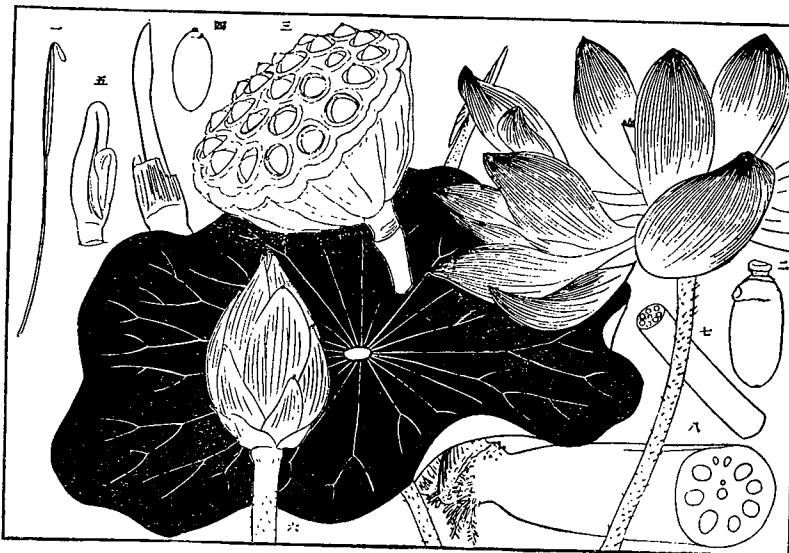


Fig. 2 *Nelumbo nucifera* Gaertner; Sacred Lotus  
(Woodcut from Yokusai Iinuma, *Sōmoku Dzusetzu*, 3rd ed.; 1910)

Arber have drawn attention, the thickness of the stalk is compared to that of a man's finger, its air passages to a honeycomb, the size of its leaf-blade to that of a Thessalian hat, the size of its flower to that of a large poppy, its colour to a rose's, its receptacle to a round wasp's nest and its fruits to beans! This a natural and effective method, which has

remained in use all through the ages. Even so prominent a systematist as Sir Joseph Dalton Hooker used it late in the nineteenth century. In the technical descriptions of his standard work *The Flora of British India* (1875–97) Hooker did not hesitate to write of a 'stem as thick as the arm or leg', a 'stem as thick as a swan's quill', a 'tuber the size of a walnut', a 'fruit very variable in size, from a hen's egg to a man's fist', a 'drupe the size of a cherry' and so on.

The technical terms used by Rehder in the above description merit attention. 'Tree', 'bark', 'branch', 'leaf', 'cluster', 'tuft' and 'nut' are ordinary English words, either certainly or probably of Teutonic origin; the more technical words such as 'pubescent', 'ovate', 'serrate' and 'ovoid' are of Latin origin, likewise such words as 'base', 'nerve', 'vein', 'apex'. In a longer description the number of Latin-based words would have been much greater. Their use disguises the fact that the same comparative method is being employed. 'Pubescent' comes of a comparison with the hairs which appear on the body at puberty (*pubes*), 'serrate' with a saw (*serra*), 'ovate' and 'ovoid' with an egg (*ovum*). These are well-known concrete things of everyday experience, and, since it is easier to extend the use of words we know than to create new ones, the history of terminology is essentially one of the gradual modification and combination of words linked to such models. Rehder's English description goes readily into botanical Latin.<sup>1</sup> Their degree of resemblance is not accidental. As regards the technical words, it results from the predominant part which Latin has played in the development of the English scientific vocabulary and the deliberate adoption of Linnaeus's Latin terminology by botanists in the late eighteenth century as the basis of the English language of botany (cf. Martyn, 1791; Stearn, 1955).

#### PLINY THE ELDER AND ISIDORUS.

Pliny the Elder undoubtedly incorporated translations into Latin from Theophrastus in his *Historia naturalis* (compiled first century A.D., frequently copied during the Middle Ages, first printed 1469, with 190 editions between 1469 and 1799), which, although 'a great storehouse of misinformation as well as of information, even more valuable as a collection of ancient errors than it is as a repository of ancient science' and, according to Pliny, drawn from works by some 473 authors, 146 Roman and 327 Greek, was of great importance in the medieval and Renaissance period as the major surviving encyclopaedic work

<sup>1</sup> *Arbor ad 20 m. alta; cortex griseus; ramuli juventute pubescentes; folia ovata ad ovato-oblonga, acuminata, basi plerumque rotundata, acute duplo-certo-serrata, 4–10 cm. longa, supra atro-viridia et sparse hirsuta, venis lateribus utrinque 12–15; amenta fructifera 3–5 cm. longa; nucula ovoidea, 4–15 mm. longa, apice pilosa.*

of Latin antiquity. Many Greek concepts and plant-names came to the notice of the sixteenth-century herbalists through the Latin of Pliny. From Pliny, as Sprague (1933a) has pointed out, Brunfels and Fuchs took much of their terminology. Thus from Pliny's *Historia naturalis* have come many of the terms employed in modern botanical Latin, undergoing much change in meaning on the way. According to Sprague's glossary (1933a), about 187 terms occur in Pliny's *Historia naturalis* which are the same as modern botanical terms or are used in a more or less botanical sense. The resemblance is, however, often deceptive. Thus the word *bractea*, as used by Pliny, means a thin plate of metal or a thin layer of wood, *corona* a garland, *pistillum* a pestle wherewith mustard seed was ground in a mortar, *pollen* a fine flour.

Pliny's vocabulary has indeed a marked economic bias, reflecting a typically Roman preoccupation with matters immediately practical and useful rather than philosophic. The most useful parts of plants are the stems and shoots and their fruits. Of words relating to these parts Pliny had a good store; *truncus*, *caudex*, *caulis*, *stolo*, *geniculum*, *surculus*, *stipula*, *vimen*, *virga*, *humor*, *ignum*, *internodium*, *liber*, *ramus*, *ramulus*, *medulla*, *palmes*, *scopa* and *talea* are among the words he uses for stems and stem-structures. For fruits he had such words as *acinus*, *baca*, *balanos*, *cortex*, *vasculum*, *utriculus*, *glans*, *granum*, *lappa*, *ignum*, *nucamentum*, *nux*, *pappo*, *pomum*, *putamen*, *tegmen*, *tunica*, *siliqua*, *uva*. For leaves and flowers, on the contrary, his vocabulary was very limited. Moreover, the same word could have a variety of meanings. The word *calyx*, according to Sprague, was used by Pliny to designate what we now call an involucre (e.g. in *Tragopogon*), a cupule (e.g. in *Quercus*), a perigon (e.g. in *Lilium*), a calyx (e.g. in *Rosa*), a corona (e.g. in *Narcissus*), a capsule (e.g. in *Papaver*) and a pericarp (e.g. in *Juglans*, *Punica*); he also used it for a covering of wax put around fruit as a preservative, the outer covering of a charcoal heap, the shell of an egg and the shell of a mollusc! Obviously Pliny used any word which seemed apt for the occasion; it troubled him not at all if the same word was used elsewhere in a different sense. He was, in short, writing as a man of letters, not as a scientist using technical terms with restricted and well-defined meanings. Hence, although Pliny's work<sup>1</sup> is the supreme work in classical Latin about plants, it supplies the raw material for a botanical terminology, and no more.

The same is true of medieval Latin literature about plants. The Spanish encyclopaedist Isidorus Hispalensis (A.D. 560–636) of Seville, whose *Origines sive Etymologiae Libri* is a valuable store of early medieval words relating to all branches of learning, agriculture among

<sup>1</sup> See Gudger (1923), André (1955) and Stahl (1962: 101–119) for more detailed accounts.

them, has but 74 terms which may be interpreted as botanical (cf. Sprague, 1933c) and most of these are derived from Pliny. He seems, however, to have been the first to list the word *botanicum* (from Greek *βοτανη*, an herb), a word which did not readily establish itself (cf. Möbius, 1944) before the eighteenth century.

#### ALBERTUS MAGNUS AND RUFINUS

The next medieval writer of importance upon plants, Albertus Magnus (1193–1280), Bishop of Regensburg, paid considerable attention to plant structure in the midst of his philosophical and theological studies (cf. Balss, 1947; Sprague, 1933c, d). His work *De Vegetabilibus Libri VII* contains 142 more or less botanical terms, according to the glossary compiled by Sprague (1933d), who points out that Albertus employed two or three different words in practically the same sense, that many botanical terms still current nowadays were then used in very different senses, and that certain words possessed a more general signification, covering several morphological categories now recognized as distinct. Thus the word *folliculus* was applied by Albertus to a covering of bud-scales, a calyx and a capsule, the word *theca* to an involucre (e.g. of *Castanea* and *Tragopogon*), a calyx, a capsule, a follicle, etc., *siliqua* to a spathe (e.g. of *Phoenix* and *Arum*), glumes, a calyx, a capsule, a legume, the shell of a nut and the core of an apple! Albertus clearly recognized more structures than he had convenient words available. In the flower of borage (*Borago officinalis*; Fig. 3) he distinguished between the different floral whorls and described it as 'arranged like a star composed of five circles consisting of five parts each, namely (1) *theca floris* (calyx), (2) *folia floris* (corolla-lobes), (3) *parvulae eminentiae in flore ipso* (corona-segments), (4) *quinque virgulae* (stamens), and (5) *una virgula* (style), nos. (4) and (5) collectively being termed *spicae floris*' (cf. Sprague, 1933c: 436). The work of Albertus could have provided the foundation for a morphological system had others come forward to extend his observations. As Thorndike (1946) has emphasized, 'in the manuscript age before the development of printing even so celebrated a Schoolman as Albertus Magnus and so important a treatise in the history of botany as *De Vegetabilibus et Plantis* might remain unknown to and unread by other specialists in the same field'. Thus Albertus's work evidently never came into the hands of his lesser-known contemporary, Rufinus of Genoa.

This Rufinus was an Italian monk who compiled a Latin herbal, probably between 1287 and 1300, which was first published in 1946. Its principal interest lies in the observations which Rufinus added to those gathered from his authorities and in his descriptions of plants unknown to them. The descriptive botany of Rufinus, although

praised by Thorndike as being for particular plants 'more specific and discriminating than that of any previous author, ancient or medieval', represents no advance on that of Theophrastus. Identification of the plants concerned is almost impossible from the descriptive notes of these authors, unless the plant has very well-marked characters. Such a plant is the one called *centaurea maior* by Rufinus and described

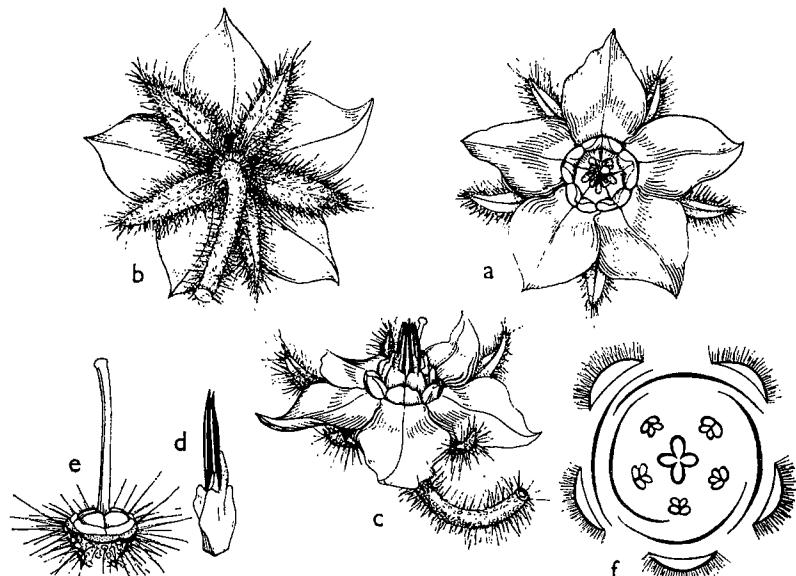


Fig. 3 *Borago officinalis* L.; Borage  
a, flos desuper visus; b, flos ab infra visus; c, flos a latere visus; d, stamen; e, pistillum; f, diagramma floris (drawing by Priscilla Fawcett)

as follows: 'Facit gambulam rotundam, lucidam et viridissimam et folia ut matersilve licet parvula, et transit gamba per medium folii, et est spatium inter folium et folium quatuor digitorum et in sumitate gambe facit flores croceos multos. Altitudo gambe est per brachium vel circa, et sapor eius est amarissimus, sed in flore eius sunt octo folia croceissima.' This translates as follows: 'It makes a stem rounded, shining and most green and leaves as those of *mater silva* (*Loniceria periclymenum*) although very small, and the stem passes through the middle of the leaf, and there is a space of four inches between leaf and leaf, and at the top of the stem it makes many yellow flowers. The height of the stem is a cubit or thereabouts, and the taste of it is most bitter, but in the flower of it are eight leaves most yellow.' The plant thus described is undoubtedly *Blackstonia perfoliata* (*Chlora perfoliata*; Fig. 4), easily recognized by its perfoliate leaves and bright yellow flowers.

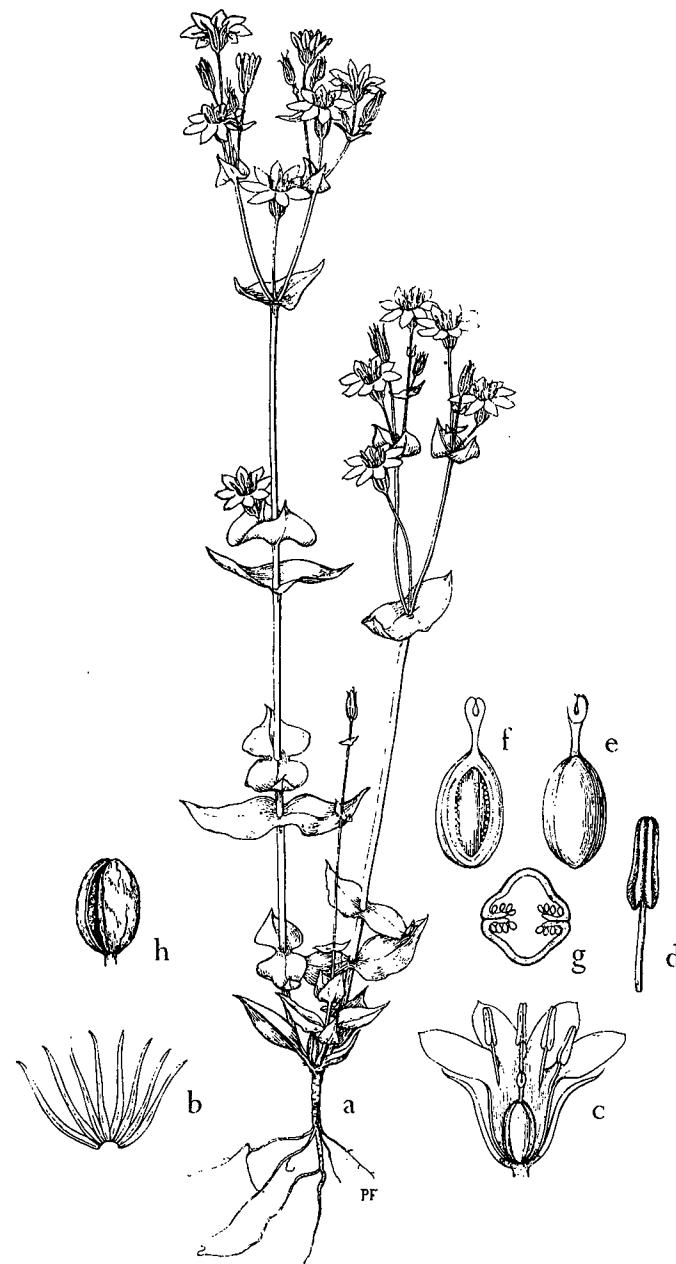


Fig. 4 *Blackstonia perfoliata* (L.) Hudson; Yellow-wort  
a, planta integra; b, calyx explanatus; c, flos longitudinaliter sectus ut stamina et pistillum apparent; d, stamen; e, pistillum cum ovario longitudinaliter secto; f, pistillum cum ovario longitudinaliter secto; g, ovarium; h, capsula (drawing by Priscilla Fawcett)

This quotation will suffice to illustrate the rambling style of medieval plant descriptions. Rufinus's use of the words *gamba* and *gambula*, evidently meaning a stem and borrowed from the vulgar Latin *gamba* or *camba* (leg), is of interest, as they do not occur in the glossaries to the works of Pliny, Isidorus and Albertus Magnus. Many long-dead words litter the way to our modern botanical terminology.

#### VALERIUS CORDUS AND FUCHS

Despite their frequent lack of precision, the Latin words available to a keen and talented observer in the sixteenth century were adequate for giving descriptions of plants that did not require minute detail. Thus Valerius Cordus (1515-44) and Charles de l'Écluse (Carolus Clusius, 1526-1609) in the sixteenth century wrote descriptions so apt and full of significant facts that the plants they had in mind can be confidently identified. Cordus, when he died of a fever at Rome in 1544, aged but twenty-nine years, left a manuscript *Historia Plantarum* containing descriptions of some 500 species, mostly medicinal. According to T. A. Sprague and M. S. Sprague (1939), about 66 were then new. One of these was the flowering rush (*Butomus umbellatus*; Fig. 5) called by Cordus *Gladiolus palustris*. The following extract from his account will serve to illustrate not only his keen observation but the general style of plant description, which prevailed from his time until the early eighteenth century: 'Gladiolus palustris, folia ab una radice erigit multa, iridi similia, angustiora tamen, triquetra & superius in mucronum desinentia, e quorum medio caulis duum triumve cubitorum altitudine erumpit, insigni levore & aequalitate praeditus, in cuius summo flores multi, longis pediculis, ex uno principio nascuntur, in purpura candidi, tribus foliolis constantes, sub quorum intervallis alia tria (sed illis minora) sunt. Stamina in se flores habent numero plerumque novem, croceo in summitate pulvisculo manus attractantium insipientia. . . . Nascitur autem pinguibus limosis & humentibus locis, quo fluviorum inundationes pervenire possunt'. (Val. Cordus, *De Pl. Lib. II, Cap. IX*, p. 124). This may be translated as follows: 'Gladiolus palustris from one root raises many leaves like those of an iris, yet narrower, three-angled, and ending above in a point, out of the middle of which a stem shoots forth to a height of two or three cubits, provided with notable smoothness and evenness, at the top of which from a main one arise many flowers with long foot-stalks, purple becoming white, consisting of three little leaves, below the intervals of which are another three (but smaller than these). The flowers have stamens within usually to the number of nine, with a yellow powder at the top colouring the hands of those who touch them. . . . It is

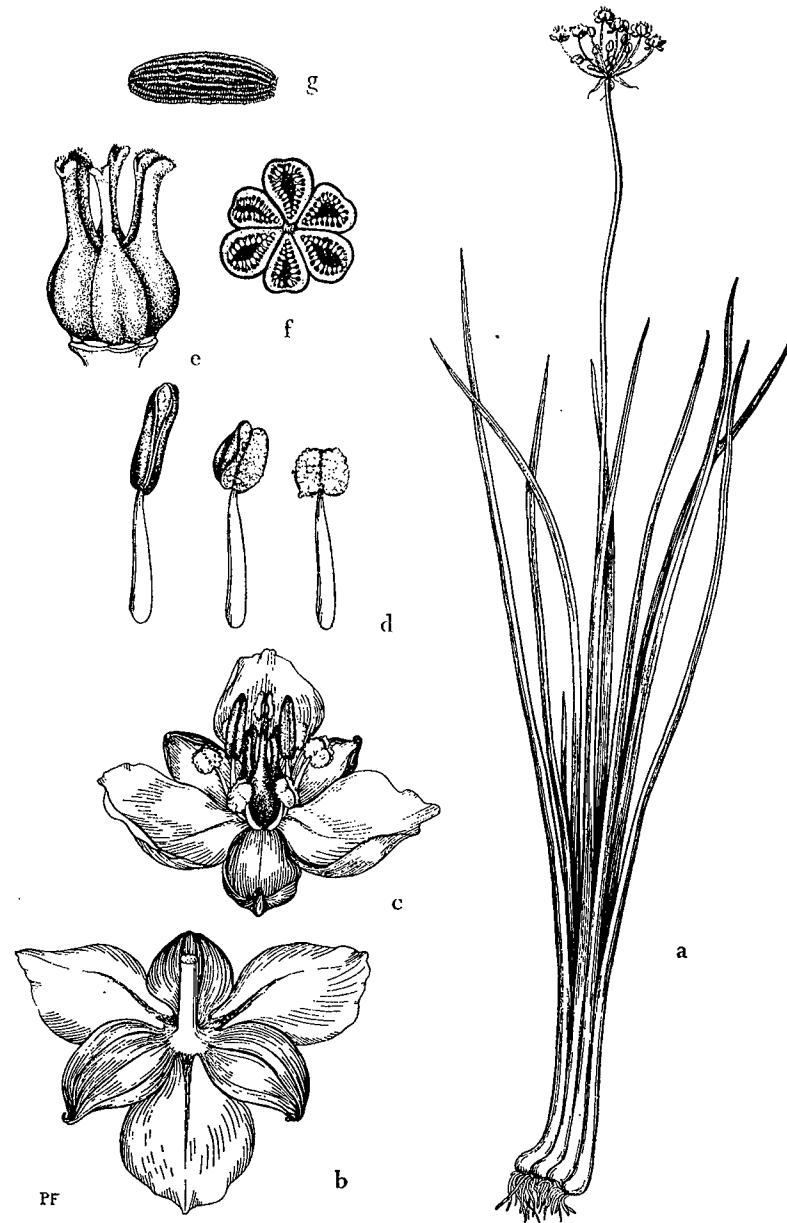


Fig. 5 *Butomus umbellatus* L.; Flowering-rush  
a, planta florens; b, flos ab infra visus; c, flos desuper visus; d, stamina; e, gynoecium lateraliter visum; f, gynoecii sectio transversalis; g, semen (drawing by Priscilla Fawcett)

found in lush muddy and wet places, where flooding rivers are able to reach.'

Descriptions of this type, with their active verbs, have a vivid and dynamic quality. Down to the eighteenth century botanists knew their plants mostly in a living state, as organisms shooting up from the root, bursting into leaf and flower, giving birth to the fruit; they wrote in this way of the plant's development because thus it happened under their eyes. Their plants grew in gardens around them or were observed in the wild, which meant that the number available was limited. The elimination of the verb from technical descriptions was symptomatic of a different technique, that of studying by means of herbarium specimens the plants from distant lands, which could not be examined when alive. The herbarium worker usually sees an individual plant only at the stage of development it had reached when gathered and dried for the herbarium. In descriptions of such static material, verbs, of which the essential function is, of course, to express action, are often redundant or indeed misleading.

In Cordus's descriptions there occur a number of words not used today, e.g. *fulcrum* (in classical Latin 'a couch') meaning an adventitious root serving as a prop, *caliculus* (= *cauliculus*) a small stem, *pulvisculus* (in classical Latin 'a fine powder') pollen, *cornicula* (in classical Latin 'little horns') the curved carpels of a peony (*Paeonia*), *apex* the anther; there are also others which are not used today as Cordus used them, e.g. *involucrum* (in classical Latin 'a wrapper') for the spathe of Arum, *capitulum* (in classical Latin 'a small head') and *tuberculum* (in classical Latin 'a small swelling') for the ovary, *caliculus* for the calyx of *Labiatae*: on the other hand most of his words meant the same then as they do now. E. L. Greene (1909) in his enthusiastic appreciation of Cordus as the creator of 'a phytography of a new type' reads rather more into Cordus's use of words than their author intended.

The excellence of the woodcuts with which Cordus's contemporary Leonhart Fuchs (1501-56) illustrated his *De Historia Stirpium* (1542) made detailed descriptions unnecessary but he included an explanation of certain terms, more or less botanical or at least relating to plants, which the inexperienced might find hard to understand. This glossary has been translated into English by Helen A. Choate (1917). Of his botanical terms, 49 remain in use with identical or related meanings, e.g. *aculeus*, *arista*, *bacca*, *bulbus*, *calyx*, *culmus*, *gemma*, *gluma*, *spica*, *unguis*; 18 have changed in meaning, e.g. *capitulum*, *cyma*, *conus*, *lomentum*, *racemus*, *stipula*; 43 have become obsolete, e.g. *acinus*, *acus*, *alsiosa*, *apex*, *asparagus*, *echinus*, *iulus*, *oculus*, *pampinus*, *viticula*, *umbilicus*; 3 terms used in a non-botanical sense by Fuchs have now a botanical application, i.e. *alabastra*, *amphora* and *ligula*. Fuchs's glos-

sary also includes 15 non-botanical words, e.g. *acetabulum*, *aluta*, *amuleum*, *cyathus*, *congius*, *cotyle*, *cubitus*.

### MALPIGHI, CAMERARIUS, JUNG, RAY AND TOURNEFORT

Understanding of the functions of the floral parts and the provision of terms for them came in the seventeenth and eighteenth centuries. Botanically the seventeenth century began with the publication at Antwerp in 1601 of the *Rariorum Plantarum Historia* by Carolus Clusius (Charles de l'Écluse); towards its end came the publication in London of the two volumes of John Ray's *Historia Plantarum* (1686-88), followed by a supplementary volume in 1704. These two massive works, both written in Latin, are classics of pre-Linnaean literature; sooner or later the student of European plants has to consult one or both. Their descriptions resemble in general style those of Valerius Cordus. The seventeenth century also saw the publication of other works of far-reaching importance for the development of systematic botany although not directly concerned with it, notably Nehemiah Grew's *Anatomy of Vegetables begun* (1672), Marcello Malpighi's *Anatome Plantarum* (1675-79), Joachim Jung's *Isagoge phytoscopica* (1678) and Rudolf Jakob Camerarius's *De Sexu Plantarum Epistola* (1694). They illustrate the first impact of a great technological advance, the development of magnifying glasses, upon plant study. Cordus in the sixteenth century A.D. had been technically no better equipped than Theophrastus in the third century B.C. Even a low magnification reveals structures they could never have seen; moreover, making an object appear big gives it an importance in the mind which provokes enquiry and thought. Thus in the seventeenth century floral structures now received attention in greater detail and botanists fumbled for words to designate them.

Few of the words used by Malpighi have survived into modern botanical terminology. Nevertheless he established the word *calyx* for the outer green covering of the flower, although he applied it to the involucle of *Compositae* as well; sepals and involucral scales he called *foliola calycis*. What we now call the corolla he called the *flos*, using the word *folium* (leaf) when it was of one piece and *folia* (leaves) when divided into petals. The florets of *Compositae* he called *flosculi*. For the filament of the stamen he used the word *petiolus*, for the anther *capitulum* (literally, a little head). The gynoecium as a whole was covered by the word *stylus*, the ovary being distinguished as the *uterus* and the style as the *tubus*; he termed the carpel a *loculus*. He compared

the filamentous corona of *Passiflora* to a crown (*corona*), thus anticipating the later technical adoption of the word *corona* for this.

Grew, Sir Thomas Millington and John Ray recognized the sexual function of the inner parts of the flower; but the honour of proving this and incidentally of introducing the experimental method into botany belongs to Rudolf Jakob Camerarius (1665–1721) of Tübingen, who found that on removing the staminate flowers of the castor oil plant (*Ricinus*) before the dehiscence of the anthers he never obtained perfect seeds. He also made observations on mulberry, annual mercury (*Mercurialis annua*), spinach (*Spinacia oleracea*) and maize (*Zea mays*). These he recorded in an essay, *De Sexu Plantarum*, printed as an open letter to Michael Bernhard Valentini (1657–1729) of Giessen. In this occurs a statement, revolutionary at the time and among the most important in the whole history of botany, concerning the anthers or *apices* as they were then called: 'Aequum ergo omnino videtur, his ipsis apicibus assignare nobilissimum nomen, & munus partium genitalium masculini sexus, ut capsulae eorum sint vascula & conceptacula, in quibus semen ipsum, pulvis ille, subtilissima plantae portio secernitur, colligitur, & hinc postmodum dispensatur. . . . Hos uti apices seminis masculi officinam, ita seminale vasculum cum sua plumula sive stilo partes genitales, femininio sexui competentes, plantae pariter exhibent.' (Hence it appears wholly reasonable to assign to the apices themselves a nobler name and the function of the genital parts of the male sex, as their capsules are vessels and containers, in which the semen itself, that powder, the most subtle part of the plant, is produced, collected and from here afterwards given out. . . . Plants exhibit equally these apices as the factory of the male semen and the seed-vessel with its little feather or style as genital parts proper to the feminine sex.)

The effect of this discovery was far-reaching. By concentrating attention on floral organs, which by means of lenses could now be examined in detail, as Malpighi and Grew had demonstrated, it stimulated Linnaeus into the production of a system of classification based solely upon them and made necessary a vast new Latin terminology. Part of such a terminology was provided by Joachim Jung (1587–1657) in a little work, *Isagoge phytoscopica* (1678), first published twenty-one years after his death by his student Johannes Vagetius. Jung, who was born at Lübeck and studied at Rostock, Giessen and Padua, taught mathematics at Giessen and Rostock and botany and zoology at Hamburg. In him the philosophic approach to plant study, that of Theophrastus, Albertus Magnus and Cesalpino, became once more alive; he tried to give botanical terminology something of the precision of mathematics. His work is thus very formal in character, consisting of aphorisms, of which the following will serve as examples:

'*Folium* est, quod a sede, cui adhaeret, ita in altitudinem, sive longitudinem, & latitudinem extenditur, ut tertiae dimensionis termini inter se differant, h.e. Superficies folii interna ab externa.' (The leaf is that which from its seat of attachment spreads out in height, or length, and breadth in such a manner that the limits of the third dimension differ from one another, i.e. the inner surface of the leaf from the outer.)

'14. *Petiolum*, sive *Pediculus folii*, est pars in longitudinem extensa, quae folium sustinet, & cauli connectit.' (The petiole, or footstalk of the leaf, is the part stretched in length which supports the leaf and joins it to the stem.)

'15. *Petiolum stricte* dictus a caule usque ad folii initium intelligitur.' (The petiole properly called is understood as being from the stem to the beginning of the leaf.)

'Id., quod inter folia est, *Nervus saepius*, aut *Costa* dicitur.' (The same, which is the middle of the leaves, is called most often the nerve or the rib.)

'16. *Nota*. *Folium compositum* ab imperitis aut negligenter observantibus pro Ramo aut Surculo habetur, sed discernitur facile, 1. Quod superficiem habet internum & externum, ut & folium simplex. 2. Quia totum autumno decidit, ut & folium simplex.' (The compound leaf is taken by the inexperienced or carelessly observant for a branch or shoot, but is easily to be distinguished (1) in that the surface has an inside and outside, like a simple leaf; (2) because it falls as a whole in autumn, like a simple leaf.)

'*Flos* est pars plantae tenerior, colore, vel figura, vel utroque insignis, rudimento fructus cohaerens.' (The flower is the thinner part of the plant, notable for its colour or shape or both, closely connected with the rudiment of the fruit.)

'*Perianthium* est, quod florem tegit, ideoque crassius est, minus insigne flore ipso. Dicitur enim *calyx*.' (The perianth is that which covers the flower, and therefore it is thicker and less prominent than the flower itself. It is indeed called the calyx.)

'*Flos vel nudus* est, vel *perianthio munitus*. 2. *Flores nudi* ut *Tulipae*, *Lilii*, *Martagi*, *Colchici*, *Croci*, *Polygonati*, *Sambuci*, *Fagopyri*. 3. *Perianthio muniti*, ut *Borraginis*, *Buglossae*, *Papaveris* &c.' (The flower is either naked or provided with a perianth. Naked flowers, as those of *Tulipa*, *Lilium*, *Martagon*, *Colchicum*, *Crocus*, *Polygonatum*, *Sambucus*, *Fagopyrum*. Provided with a perianth, as those of *Borage*, *Bugloss*, *Papaver*, etc.)

As Arber (1950) has observed, it is remarkable how often the words of Jung's terminology have survived though sometimes changed in meaning, as for example *perianthium* in the above quotation. They

owe this largely to their employment by Ray and Linnaeus. Some time before 1660 a manuscript copy of Jung's little treatise, later printed at Hamburg in 1678, came into the hands of John Ray (1628–1705), who gave it a publicity it would never have received in its original state. Ray referred to Jung's work in his *Index Plantarum Agri Cantabrigiensis* (1660) and *Methodus Plantarum nova* (1782) and included Jung's terms and definitions in the glossary to his *Historia Plantarum* (1686). Ray, an internationally minded scholar, naturally wrote in Latin, but he gave English equivalents in his glossary. The first word is *Antherae* of the herbalists, in English 'the Chives', a word which has disappeared from modern English, supplanted by the very word which in 1686 it was used to explain! Earlier writers mostly used the word *apex* (plural *apices*) for the anther. *Capillamenta* (threads) has been displaced by *filamenta*; *julus* and *catulus* (a palm or catkin) by *amentum*; *geniculum* (a joint or knot) by *nodus*; *ossiculum* (the stone of a plum, cherry or the like fruit) by *putamen*. Some words, such as *echinus* (a burr or any prickly fruit), *asparagus* (a tender sprout or shoot of any herb from the ground), *vimen* (a bending twig or wythe) and *vinaceum* (a grape-stone), have been discarded because modern botany does not need special terms for these. Others, such as *corymbus*, *cyma*, *folliculus*, *gluma*, *perianthium*, *scapus*, *siliqua*, *spatha* and *thyrus*, survive with slightly or greatly changed meanings.

A number, however, remain essentially the same, e.g. *arista* (the beard or awn), *baccae* (berries), *capitulum*, *capreolus* (a clasper or tendril), *conus*, *folium*, *fructus*, *gemma* (a bud), *internodium*, *nervus*, *panicula*, *pappus*, *petalum*, *pericarpium*, *petiolus*, *pomum*, *spica*, *stylus*, *tomentum*, etc. It is worthy of note that the term *flos* (flower) had not yet acquired its comprehensive botanical meaning; it still meant simply the corolla and the androecium and did not include the calyx and gynoecium. Hence the *calyx* is defined by Ray as 'the cup enclosing or containing the flower'. From Fabio Colonna's annotations to F. Hernandez, *Rerum Medicarum Novae Hispanicae* (1649), Ray picked up a valuable suggestion, namely that the floral leaves (*floris foliola*) should be distinguished from the true leaves by a special term, the Greek *πεταλον* (petalon). Colonna never used this word himself, and to Ray we owe the definite introduction into botanical Latin of *petalum* and thence, with slight modification, into the everyday usage of many modern languages (see below, pp. 40, 46).

A further notable contribution to greater clarity in botanical terminology was made in 1700 by Joseph Pitton de Tournefort (1656–1708) in the introduction to his *Institutiones Rei Herbariae*; here the floral parts and especially the forms of the corolla upon which he largely based his classification are well defined.

## SÉBASTIEN VAILLANT

More and more the flower came to be regarded as the most important organ for the classification of plants, and more and more terms came into use to express both its underlying uniformity and its diversity of detail. In 1717 Sébastien Vaillant (1669–1721) published an important address, written in both French and Latin and entitled *Discours sur la Structure des Fleurs, Sermo de Structura Florum*, wherein he whole-heartedly accepted Camerarius's views on the sexuality of flowers and made known a few new words. His introductory remarks touch upon a difficulty which continually faces botanists, the choice between using everyday words with both a common and a specialized meaning or of introducing new words which are unambiguous but may be unpopular. For the male organs Vaillant adopted the word *stamina*, distinguishing the anthers as *capitula* and the filaments as *caudae* or *filamenta*. For the female organ as a whole, the *pistillum* of many authors, he used the word *ovarium*, another innovation, rather than *matrix* proposed by Malpighi. The lower part of this, corresponding to the ovary of later terminology, he called the *corpus* or *venter*, noting that it could be above or below the 'flower', i.e. superior or inferior, and he adopted the word *tubus* for the style. He called attention to the ovules in the ovary. Vaillant's actual words merit quotation: 'Ovaria Malpighio dictae Matrices . . . organa sunt plantarum foeminina', 'Corpus vel venter inferior ovarii pars', 'in ovula Ovarii, . . . in primula veris, ubi ovula omnia eidem placentae affixa sitae in ovaria'. Here apparently for the first time in botanical literature are words which have become indispensable: ovary (*ovarium*), ovule (*ovulum*) and *placenta* adapted in the time-honoured Theophrastan tradition from zoological usage. Vaillant's other new terms have long been forgotten. Such apparent wastage of words occurs throughout the development of a terminology and is by no means regrettable; the greater the production of seed by a plant, the stronger is the chance of a few seedlings reaching maturity. The coining or introduction of new words provides material for the action of linguistic natural selection whereby the most concise, necessary and expressive ones pass into use and the rest perish. No botanist nowadays uses the terms *arinus*, *aggedula*, *anabix*, *besimen*, *calpa*, *colesula*, *elytriculus*, *erisma*, *epimenus*, *gymnocidium*, *nephrosta*, *orygoma*, *perocidium*, *peridroma*, *perigynanda*, *raphida* and *ypomenus* proposed in 1790 by the ingenious and heterodox Noel Joseph de Necker (1729–93), but we owe to him the terms *achena* (achene) and *sepalum* (sepal) put forward in the very same work as these; botanists should hardly need reminding that grain grows on the ear amid chaff.

Classical Greek and Latin are poor in words for parts of the flower,

since, as Rickett emphasizes, 'a rational terminology mirrors that upon which it is based, an understanding of the things concerned', and not until the end of the seventeenth century was such an understanding gained.

#### LINNAEUS'S REFORM OF TERMINOLOGY

The works of Camerarius, Ray and Tournefort which much influenced Linnaeus belong to the latter half of the seventeenth century so immensely important in the development of modern science (cf. Stearn, 1961; Whitehead, 1926). In 1690 their contemporary John Locke (1632-1704) published his *Essay concerning Human Understanding*, the greater part of which he wrote while living in Holland. Locke dealt with 'ideas and words as the great instruments of knowledge' and stated: 'The ends of language in our discourse with others being chiefly these three: first, to make known one man's thoughts or ideas to another. Secondly, to do it with as much ease and quickness as is possible; and, thirdly, thereby to convey the knowledge of things. Language is either abused or deficient when it fails any of these.' To remedy these defects he made various suggestions. He concluded: 'It were therefore to be wished that men, versed in physical inquiries and acquainted with the several sorts of natural bodies, would set down those simple ideas wherein they observe the individuals of each sort constantly to agree. This would remedy a good deal of that confusion which comes from several persons applying the same name to a collection of a smaller or greater number of sensible qualities. . . . methinks it is not unreasonable to propose, that words standing for things that are known and distinguished by their outward shapes should be expressed by little draughts [i.e. outlines] and prints made of them. A vocabulary made after this fashion would perhaps, with more ease, and in less time, teach the signification of many terms than all the large and laborious comments of learned critics.' Locke added: 'In all discourses wherein one man pretends to instruct or convince another, he should use the same word constantly in the same sense.'<sup>1</sup>

Now, this is exactly what Linnaeus set out to do in his *Hortus Cliffortianus* (1738), prepared when he too was a guest of the Dutch. He early grasped the need for precision in terminology and nomenclature, and four pages and two plates of this impressive folio work define the Latin terms used in describing leaves. Most of them remain in use today with essentially the same meanings, but some, e.g. *oblongus* and *lanceolatus*, have diverged; hence it is wise to consult Linnaeus's

<sup>1</sup> Locke, like John Stuart Mill later, had botanical interests strong enough to cause him to form a herbarium; cf. J. W. Gough, 'John Locke's herbarium', *Bodleian Library Record*, 7: 42-46 (1962).

illustrations (Figs. 16, 17) when interpreting descriptions from 1753 to about 1800.

In his *Fundamenta botanica* (1736; Fig. 6), a little work of 36 pages, Linnaeus had already outlined his procedure in 365 aphorisms reminiscent of Jung's, although not before 1774 did he see a copy of Jung's

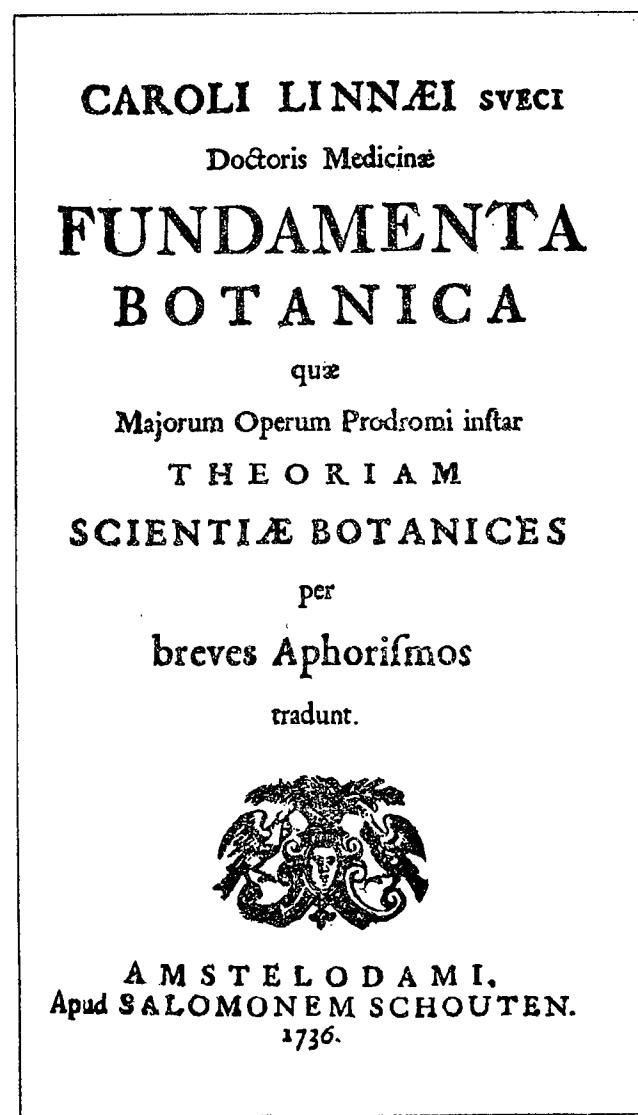


Fig. 6 Title-page of Linnaeus's *Fundamenta botanica* (1736)

actual work as distinct from Ray's version of it (cf. Mevius, 1959). He selected from the classical words converted into technical terms by his predecessors those which seemed apt, pleasing and unambiguous, and he added others equally so. His choice largely determined the terms we use now. Thus he adopted the herbalist's *anthera* (in classical Latin a Greek loan-word signifying a 'medicine composed of flowers') instead of *apex* as used by earlier authors and adopted *filamentum* for the support of the anther, reserving *stamen* (in classical Latin 'a thread') for the whole organ as Vaillant had done. He introduced the word *corolla* (in classical Latin 'a little garland'), adopting *petalum* for a flat petal and *nectarium* for a pouched or spurred petal or other nectar-producing structure and distinguishing between the *tubus* and *limbus*. The floral parts he defined concisely by their relative position going from the outside inwards: 'Situs Naturalissimus est, quod *Calyx* involvat *Receptaculum*, cui *Corolla* alternatim adnascitur; huic autem interius alternatim respondent *Filamenta*, quorum apicibus *Antherae* incumbunt; Centrum *Receptaculi* occupat *Germen*, cuius apici *Stylus* insidet, summo *Stigma* gerens. Hisce decidentibus *Germen* in *Pericarpium* crassescit, calyce sustentatum, *Semina* *Receptaculo* *Fructus* adnexa includens. *Receptaculum* *Floris* germini vel subnascitur, vel circumnascitur, vel supernascitur.' This may be translated as follows: 'The most natural arrangement is that the *calyx* envelops the receptacle, to which the *corolla* in alternation is attached; to this moreover on the inside alternately respond the *filaments*, on the tips of which lie the *anthers*; the *germen* occupies the centre of the receptacle and has the *style* seated on top, with the *stigma* borne at the tip. These fallen, the *germen* fattens into a *pericarp*, supported by the *calyx*, including within itself the *seeds* joined to the receptacle of the fruit; the *receptacle* of the flower grows below, around or above the *germen*'.

In 1750, while bed-ridden and so crippled with gout that he had to dictate everything to his student Petrus Loefling, Linnaeus expanded the *Fundamenta botanica* into a book of 364 octavo pages with 11 plates, published in 1751 under the name *Philosophia botanica*. It is the first textbook of descriptive systematic botany and botanical Latin. Linnaeus indicated its history and scope in his first sentence: '*Fundamentis Botanicis Theoriam atque Institutiones Rei Herbariae sub paucis Aphorismis olim comprehendi, quorum Explicationem per Exempla, Observationes & Demonstrationes, distinctis riteque definitis plantarum Partibus & Terminorum vocibus, Philosophiam botanicam dixi, cum in his consistant Praecepta Artis.*' This may be translated as follows: 'Some time ago under the name of *Fundamenta botanica*, I expressed in a few concise sentences the theory and elements of botany of which the explanation by examples, observations and

demonstrations, with distinct and correctly defined parts of plants and words of definition, I have called *Philosophia botanica*, for in them are the precepts of the art.' Translations and illustrated and expanded versions of the *Philosophia botanica* (see Chapter XXII) soon appeared in England, France and Germany, together with supplementary works, glossaries and dictionaries (for lists, see Rickett, 1944; Systematics Association Committee, 1960), which not only made the new international botanical Latin language easy to learn by anyone possessing the then normal classical education but also added many new terms, some useful, most of them never accepted.

#### LINNAEUS'S REFORM OF PLANT DESCRIPTION

Linnaeus's most important predecessors in systematic botany were John Ray (1628–1705), who provided him with a comprehensive general survey of the world's flora as known late in the seventeenth century, a concept of species and a basic terminology, Joseph Pitton de Tournefort (1656–1708), who provided him with a methodical illustrated survey of the genera, and Herman Boerhaave (1668–1738), who improved upon Tournefort's method of generic description. Herbalists and botanists long before Tournefort recognized genera (cf. Bartlett, 1940; Stearn, 1960) by grouping under common headings plants with features in common but they did not define genera by providing consistent descriptions of such features. In his *Institutiones Rei herbariae* (1700), which is an improved Latin version of his *Éléments de Botanique* (1694), Tournefort gave definitions of 698 genera and stated the general considerations upon which they were based (for translation into French by G. Becker, cf. Heim, 1957: 239–306). He maintained the old distinction between herbaceous and woody plants, then founded his main classification upon the general form of the flower and recognized two grades of genera, those adequately distinguished by the form of the flower and fruit in combination, e.g. *Campanula*, *Ranunculus*, *Rosa* and *Viola*, and those for which vegetative differences were needed, e.g. *Abies*, *Larix* and *Pinus*.

Linnaeus's debt to Tournefort was indeed great; but he rejected many of Tournefort's names and united many of his genera, holding that vegetative characters should not be used for the definition of genera. He also improved the method of description (cf. Stearn, 1960: x; 1961: lvi), as quickly becomes evident when his and Tournefort's generic descriptions are compared.

The following is a typical description in Tournefort's *Institutiones Rei herbariae* (1700): 'Hyoscyamus est plantae genus, flore A monopetalō, infundibuliformi & multifido: ex cuius calyce C surgit pistillum

D infimae floris parti B adinstar clavi infixum, quod deinde abit in fructum F in ipso calyce reconditum E, ollae similem, operculo HK instructum & in duo loculamenta GG divisum septo intermedio I, cui adhaerescunt plurima semina L.'

The letters A, B, C, etc., refer to the illustration on Tournefort's Plate 41 (Fig. 7). To be noted are the verbs *est*, *surgit*, *abit* and

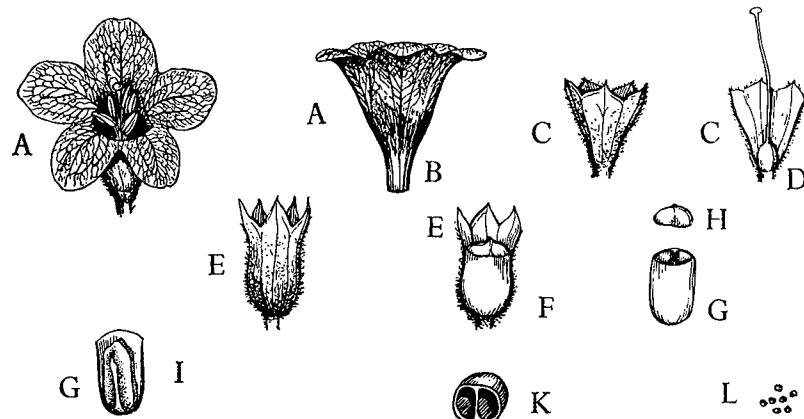


Fig. 7 *Hyoscyamus niger*; Henbane

A, corolla; B, corollae pars inferior; C, calyx; D, pistillum; E, calyx fructifer; F, fructus, dimidio calycis demoto; H, fructus operculum a latere visum; G, fructus pars inferior; I, fructus septum; K, fructus operculum ab infra visum; L, semina (drawing by Priscilla Fawcett, based on Tournefort, *Institutiones Rei herbariae*, t. 42; 1700)

*adhaerescunt*, the whole forming one sentence: 'Hyoscyamus is a genus of plants with a monopetalous funnel-shaped and multifid flower, from the calyx of which arises the pistil', etc.

In 1737 in his *Genera Plantarum* Linnaeus described the same genus as follows:

HYOSCYAMUS \* *Tournef.* 42. *Riv. I.* 152, 153.

CAL: *Perianthum* monophyllum, cylindraceum, inferne ventricosum, ore quinquefido, acuto, persistens.

COR: *Petalum* infundibuliforme. *Tubus* cylindraceus, brevis. *Limbus* erecto-patens, semiquinquefidus: *lacinias* obtusis, unica reliquis latiore.

STAM: *Filamenta* quinque, subulata, inclinata. *Antherae* subrotundae.

PIST: *Germen* subrotundum. *Stylus* filiformis, longitudine staminum. *Stigma* capitatum.

PER: *Capsula* ovato-obtusa, linea utrinque insculpta, bilocularis, duabus capsulis arcte approximatis, tecta, operculo horizontaliter dehiscente.

SEM: numerosa, inaequalia. *Receptacula* dimidiato-ovata, dissepiamento affixa.

The differences between these two descriptions in style and terminology are greater than those between Linnaean descriptions and modern descriptions. Especially to be noted are Linnaeus's elimination of verbs, the use of the nominative case, the separate treatment of each organ, the different terminology, the clear typography. By constructing all his descriptions in the same formal manner Linnaeus facilitated comparison between them and established the concise style which thereafter has been standard in botanical Latin. The development which has taken place in terminology and consequently in botanical Latin since Linnaeus's time reflects above all the innumerable enquiries into the nature of the flower and fruit made in the late eighteenth and early nineteenth centuries. These studies had their origin in the need of systematic botanists to consider as many structures as possible and to describe them accurately; but they were continued for their own interest until plant morphology and anatomy became independent disciplines. The most important investigations of morphology during this period were done by men such as Brongniart, Robert Brown, A. P. de Candolle, J. Gaertner, Lindley, Link, Martius, Mirbel and L. C. Richard, who are today remembered primarily as systematists; and it was they who, following Linnaeus, added most to botanical terminology, since they were compelled to find words for a wealth of hitherto unnoticed or unstudied details.

#### BOTANICAL LATIN NAMES OF FLORAL PARTS

How comparatively modern (i.e. brought into use between 1736 and 1844) are most of our accepted botanical terms may be illustrated by taking the names of floral parts which can be seen with the naked eye in plants such as *Anemone*, *Althaea*, *Narcissus*, *Nerium*, *Lilium*, *Myrtus* and *Vicia* known to Theophrastus, Pliny and many of the early herbalists.

The word *calyx*, as already noted (see p. 22), was used in ancient times for a variety of covering structures, as was the original Greek *καλυξ*. Early botanical writers fused with this the very similar Latin word *calix*, Greek *κυλιξ*, meaning a 'cup, goblet, drinking vessel', so that, although separate in classical Latin, *calyx* and *calix* have been used interchangeably in botanical Latin for the outermost covering of the flower or, in *Compositae*, etc., of the flower-head. Malpighi used it in its modern restricted sense in his *Anatome Plantarum* (1751), where he stated 'calyx floris basis est et fulcimentum' and gave numerous

illustrations, among them, however, the involucre of *Bellis*. Linnaeus and his contemporaries also included under the term *calyx* various bracteal structures such as the involucre, spathe and glume as well as the calyx proper (their perianthium); to obviate this ambiguous usage, Linnaeus's one-time student Friedrich Ehrhart<sup>1</sup> proposed in 1784 a new term *anthostegium* for this outer structure. *Sepalum* (from σκεπη, covering) was coined by Necker in 1790 (*Coroll. ad Phil. bot.*, 18, 30), undoubtedly in an irregular manner (for *scepalum* would have been a better transliteration) which caused Link to reject it as a barbarous word. Fortunately *sepalum* passed into general use. It satisfies all the requirements specified by Webber (1903) for a new technical word, which should, if possible, be short, euphonious, phonetically spelled, easily pronounced and different from any other word in general use, so that it will not suggest any other meaning than the one desired, and it also possesses 'a derivation which at least suggests its meaning', being linked in form to *petalum*. *Corolla* (in classical Latin, a 'little crown or garland') received its modern application from Linnaeus (*Fundam. bot.*, 10; 1736), who distinguished between the *tubus* and *limbus* of a gamopetalous corolla and the *unguis* (claw) and *lamina* (blade) of a single petal. The word *petalum* (Greek πεταλον, leaf) existed in late Latin with the meaning of 'a metal plate'; in 1649 Fabio Colonna (in Hernandez, *Rerum Med. Novae Hisp. Thesaurus*, 853) suggested its introduction into botany to distinguish the floral leaves from the ordinary leaves, and Ray definitely adopted it in 1682 (*Methodus Pl. nova*: Praef.) and 1686 (*Hist. Pl.*, 1: Term.); thus the word 'petal', which now has such poetic as well as technical associations, was unknown in Shakespeare's time. The companion word *tepalum* originated in 1827 (de Candolle, *Organogr. vég.*, 1: 503), in the French form 'tépale', as an anagram of 'pétales' to designate a division of the perigon. The term *perianthium* as used today is synonymous with *perigonium*. The application of both words has changed somewhat during the past two and a half centuries. *Perianthium* by derivation means something *around* (περι) and hence outside the *flower* proper (ἀνθός), and by 'flower' the earlier writers, from Theophrastus to the botanists of the eighteenth century, as also people in general, meant the coloured delicate part (see p. 18), i.e. the perigon or corolla and sometimes the androecium of modern terminology but

<sup>1</sup> Friedrich Ehrhart (1742-95), a Swiss pharmacist who settled in Hanover and who was among the last of Linnaeus's foreign pupils, should not be confused with the pre-Linnaean author and doctor of medicine Balthasar Ehrhart (d. 1756) of Memmingen. F. Ehrhart, who introduced the terms *rhizoma* and *perigonium*, absorbed so thoroughly his master's preoccupation with nomenclature and terminology that he even proposed rules for the naming of German children (cf. *Beitr. Naturk.*, 2: 24: 27; 1788), perhaps because he himself had no children and lacked 'das nöthigste Stück dazu, nemlich eine Frau'!

not the green calyx and the gynoecium. On historical grounds the modern use of the term 'perianth' is absurd and illogical. According to its original use *perianthium* is another name for what we now call the calyx; it originated when the term *calyx* (see above) had a wider and vaguer application; *perianthium*, as used by Jung, by Linnaeus, Patrick Browne, Thomas Martyn and other eighteenth-century botanists, meant parts outside the corolla. This should be kept in mind when consulting their publications. Unfortunately, early in the nineteenth century Mirbel and Robert Brown used *perianthium* as a general word for those floral envelopes outside the androecium which correspond to the calyx and corolla together, especially those of petaloid monocotyledons in which the outer and inner floral envelopes often differ so little in form, colour and texture. Lindley condoned their misuse of the term 'perianth', although de Candolle had already in 1827 protested against such a divergence from traditional and etymologically preferable usage. A collective term for calyx and corolla together being required, de Candolle followed Link (*Phil. bot. novae Prodr.*, 88; 1798) in adopting the word *perigonium* (from περι, around, γονη, offspring, organs of generation) proposed earlier by F. Ehrhart (*Beitr. Naturk.*, 3: 123; 1788) to cover 'mein Calyx und Linnen Corolla'.

The word *stamen* means 'a thread' and it is difficult to establish who first used it in a definite scientific sense for part of the androecium. Adrian van den Spieghel (Spigelius), when he described the flower in 1606 (*Isag. Rem Herb.*, 14) as consisting of three main parts, 'folia, stamina, stylus', certainly used it thus, but was obviously confirming current usage, exemplified by many descriptions in Dodoens, *Stirpium Historiae Pemptades* (1583) and in Clusius, *Rariorum Plantarum Historia* (1601), where descriptive notes such as 'sex alba stamina, flavis apicibus praedita' (six white threads provided with yellow tips) frequently occur. Here the word *stamen* clearly refers to the filament, *apex* to the anther; thus they were used by Tournefort in 1700. No term was then deliberately used for the whole organ. Linnaeus formally adopted *filamentum* for the filament in 1736 (*Fundam. bot.*, 10, 11), thus rejecting the other possible words, *capillamentum*, *cauda*, *pediculus* and *stamen*, for this part, and he substituted *anthera* (*Fundam. bot.*, 10, 11) for *apex* (the most commonly used word), *capitulum*, *capsula*, *testiculus* and *theca* as the name of the anther (cf. Plantefol & Prévost, 1962). No collective name existed for the whole male part of the flower until in 1826 Roeper (in *Linnaea*, 1: 433; cf. Church, 1919) introduced the term *androecium* (from ἀνηρ, ἀνδρός, a man, the male sex; οἶκος, house). To correspond with this Roeper (l.c. 438) coined the term *gynoecium* (from γυνη, woman; οἶκος, house) without reference

to the fact that the Romans had latinized as *gynaeceum* and *gynae-  
cium* the Greek *γυναικεῖον*, *γυναικῶν*, meaning 'part of the house re-  
served for women'; in Latin it was applied to the Emperor's seraglio. The term *connectivum* was introduced by L. C. Richard (*Dict. élém. Bot. par Bulliard*) in 1798 (An VII of the First French Republic). The use of the word *pollen* (in Latin 'a fine flour' and thus used by Pliny) as a technical name for the 'prolifick powder analogous to the male sperm in animals' and often called *pulvis* (dust), e.g. by Linnaeus in 1736, we owe to Linnaeus (*Sponsalia Pl.* 31, 53; 1746; reimpr. in *Amoen. Acad.* 1: 85, 103; 1749).

*Pistillum* (in Latin 'pestle') as a collective name for the female organ occupying the centre of the flower, now usually called the *gynoecium*, was introduced by Tournefort in 1700 (*Inst. Rei Herb.* 1: 70); he had previously adopted 'pistile' in his *Éléments de Botanique* 1: 54 (1694). Vaillant borrowed the term *ovarium* from animal anatomy in 1718; it has displaced Camerarius's *vasculum seminale*, Malpighi's *uterus* and Linnaeus's *germen*; but Vaillant's was probably not the earliest application of it to plants. *Stilus*, although used in Latin for a stake or pointed agricultural implement, usually meant the slender iron writing instrument, pointed at one end but broadened at the other, with which the Romans wrote on wax-covered wooden tablets (cf. Seyffert, *Dict. class. Antiq.*, 700, with fig.; 1891), and the botanical use of the word evidently refers to this. There exists, however, in Greek the word *στυλος* (stylus) meaning a 'pillar, wooden pole' which the later Greeks at Alexandria used in the sense of the Latin *stilus*. Hence the earlier botanical writers seem to have regarded *stilus* and *stylus* as interchangeable as they did *calyx* and *calix*, probably as a result of the medieval custom of often writing a Latin *i* as *y*. Clusius (*Rar. Plant. Hist.*; 1601) used *stilus*, the preferable spelling, but Spieghel and most writers *stylus*, which through Linnaeus's adoption of it has become the standard form in botanical Latin. *Stigma* (*στιγμα*, tattoo mark, spot) as the name for the pollen-receptive tip of the gynoecium was introduced by Linnaeus in 1736 (*Fundam. bot.*, 10, 12). The term *carpellum* is now applied to a division of the gynoecium at any stage of its development, both before and after pollination. M. F. Dunal, who introduced *carpellum* in 1817 (*Mon. Fam. Anonacées*, 13) as a diminutive of *καρπός* (fruit), intended it to apply only to a division of the fruit, defining it as 'dans un fruit multiple, le fruit partiel résultant de chaque ovaire fécondé et développé'; for its further history, see Lorch's essay (1963).

Thus a few of these floral terms are Latin words of which the meaning has been restricted to one of its classical uses, e.g. *calyx*; some are words of which the present use diverges little from the classical

use, e.g. *filamentum*; most of them, e.g. *corolla*, *petalum*, *corona*, *anthera*, *pollen*, *pistillum*, *stylus*, *stigma*, are classical words given new specialized meanings; the remainder are either new words coined from classical words in a classical manner, e.g. *perianthium*, *perigonium*, *androecium*, *gynoecium*, *connectivum*, *carpellum*, or new words whose connexion with classical words is so slender that they are best regarded as quite new inventions rather than adaptations, e.g. *sepulum* and *tepalum*. Most of them received their present applications between 1736 and 1844. An examination of terms for the types of inflorescence (cf. Rickett, 1944) for fruits and for seeds gives parallel results.

### INFLUENCE OF GLOSSARIES

Thus in the course of a century there arose a new Latin language enabling botanists to describe plants with precision. It now seems an exaggeration to call this 'une langue spéciale propre à tout exprimer avec une parfaite exactitude et une extrême brièveté', as Cassini did in 1817 (cf. Cassini, *Opusc. phyt.*, 3: 212; 1834), when he mentioned Linnaeus's creation of it as 'le titre le plus solide de sa gloire', but without it systematic botany and enquiries in plant geography, ecology, etc., which depend upon identification of plants, could never have made their remarkable progress during the past century. Its success was largely due to the adequate provision of glossaries and good textbooks on plant form. In the second half of the eighteenth century such works were produced by J. Berkenhout in 1764, M. B. Borckhausen in 1797, J. B. F. Bulliard in 1783, P. J. D. Giseke in 1787, F. G. Hayne from 1799 to 1812, J. Lee in 1765, J. D. Leers in 1775, H. F. Link in 1798, T. Martyn in 1793, C. Milne in 1770, G. C. von Oeder in 1764, L. C. Richard in 1764, H. Rose in 1775, J. Rotheram in 1779, J. A. Scopoli in 1783, R. Weston in 1770, J. J. Plenck in 1798, all of them largely indebted to Linnaeus. In 1800 there appeared the *Versuch einer systematischen vollständigen Terminologie für das Thierreich und Pflanzenreich* by Johann K. W. Illiger (1775–1813), which is especially noteworthy for its logical separation of terms of general application from those limited to particular organs, following the example of Heinrich Friedrich Link (1767–1851) in his *Prodromus Philosophiae botanicae* (1797). Link's work is entirely in Latin, Illiger's in German with Latin equivalents. In 1824 Link published an elaboration of this work entitled *Elementa Philosophiae botanicae*, adding a German version to the second edition of 1837; it is the best exposition in Latin of standard morphological terms. As noted by Lindley, 'little attention, however, was paid to the principles of these authors till the year 1813; when de Candolle adopted them in his *Théorie élémentaire de la Botanique*,

with his accustomed skill and sagacity', and Lindley himself developed them still further in his *Introduction to Botany* (1832; 4th ed., 1848). The most elaborate attempt to co-ordinate botanical terms is, however, the *Handbuch der botanischen Terminologie und Systematik* (1830-44) by Gottlieb Wilhelm Bischoff (1797-1854). This so-called handbook consists of three quarto volumes, with 77 plates, the first dealing with terms applicable to flowering plants, the second to cryptogams and the third outlining systems of classification to date; the index alone occupies 338 pages! As a museum of obsolete German and Latin terms it is invaluable; as a textbook it would probably have failed to standardize terminology on account of its unwieldy bulk, had not Bischoff also produced his excellent little *Wörterbuch der beschreibenden Botanik* (1839; 2nd ed., 1857).

#### A. P. DE CANDOLLE, LINDLEY AND ASA GRAY

Of far greater influence, at any rate outside Germany, have been the works of Augustin Pyramus de Candolle (1778-1841), John Lindley (1799-1865)<sup>1</sup> and Asa Gray (1810-88). All three were busy university teachers and garden directors as well as industrious systematic botanists of great ability. All three were under the necessity of explaining morphological concepts to critical students; all three described and published a great diversity and number of plants new to science; none had time to waste. Their work rests upon a sure understanding of morphology and is illuminated, de Candolle's especially, by an enquiring philosophic attitude leading to a careful choice of words. Consequently their textbooks, despite age, remain instructive and pleasant to read. In de Candolle's *Théorie élémentaire de la Botanique* (1813; 2nd ed., 1819; 3rd ed., 1844) are explained the terms used in

<sup>1</sup> John Lindley's work is so often mentioned in this book that it seems fitting to summarize here his industrious career. He was born on 5 February 1799 at Catton near Norwich, Norfolk, England, where his father was a nurseryman seemingly much more skilled in growing and studying plants than in making money and who consequently could afford neither to buy his promising son John a commission in the army nor to send him to a university; indeed, at the age of nineteen John assumed responsibility for the payment of his father's debts. He early acquired a good knowledge of Latin, French and German, and after leaving the Norwich Grammar School at the age of sixteen was sent to Belgium as agent for a London seed merchant. In 1819 he published as *Observations on the Structure of Fruits and Seeds* a translation of L. C. M. Richard's *Démonstrations Botaniques ou Analyse du Fruit* (1808) and in 1820 his *Monographia Rosarum*, the first of his many contributions to systematic botany and horticulture. He became assistant librarian to Sir Joseph Banks in 1819, then in 1822 garden assistant secretary to the Horticultural Society of London; with the management of the Society's affairs he remained busy for the rest of his life, despite being appointed first professor of botany in London University in 1829; he edited the *Botanical Register* from 1836 to 1847 and the *Gardener's Chronicle* from 1841 onwards. He received honorary doctorates from the universities of Munich and Basel. He died at Turnham Green, Middlesex, on 1 November 1865.

his *Systema* (1818-21) and *Prodromus* (Vols. 1-10; 1824-46) and his many *Mémoires* on different families; it remains one of the best and most useful introductions to botanical Latin. The only serious defect of de Candolle's work is its lack of illustrations. However, figures by J. C. Heyland illustrate de Candolle's companion work *Organographie végétale* (1827). The works of John Lindley, who was an excellent draughtsman, abound in illustrations. Of his many publications the most useful today are his *Introduction to Botany* (1832; 4th ed., 1848), and his *Elements of Botany* (3rd ed., 1849; first published in 1830 as *Outline of the First Principles of Botany*).

These works mark the end of the formative period of botanical Latin. Linnaeus about a century earlier had determined its function and nature. His successors in their exploration of plant form had provided more than enough names for most organs of flowering plants and their attributes. The reformation needed was essentially the selection and standardization of the better-known words, i.e. stipulative definition (see p. 16). In this Lindley took an important part. A forceful largely self-taught man, with a good knowledge of Latin, German and French, and also mightily industrious, he surveyed critically the works then available on botanical terminology. The symbol ‡ in his glossary brands the words he considered objectionable, obsolete or rarely used in the sense given. Throughout his textbooks Lindley took care to give brief but exact definitions of the true meanings of words which were then or had been in common use, and in the sense that he defined them they mostly remain in use today. In the United States Asa Gray's *Botanical Text-book, Part 1, Structural Botany* (1842; 6th ed., 1879) performed the same task. Together with Lindley's *Glossary* and J. S. Henslow's *Dictionary of botanical Terms* (1848-56) it forms the basis of B. D. Jackson's *Glossary of botanic Terms* (1900; 4th ed., 1928). Jackson also made much use of E. Germain de St. Pierre's *Guide du Botaniste* (1852) and his *Nouveau Dictionnaire de Botanique* (1870). Thanks to services of the great French botanical draughtsmen A. Faguet, A. Riocreux and L. Steinheil, French botanists also possess excellent illustrated works on terminology in E. Le Maout and J. Decaisne, *Traité général de Botanique* (1868), and H. Baillon, *Dictionnaire de Botanique* (1876-92).

Such works have an important stabilizing influence on terminology and also serve as guides to botanical Latin owing to the close connexion between this and the terms used in English and modern Romance languages. They interact and thus enrich each other. Everyday words such as those for root, leaf and flower differ widely in these languages because they have such a long history behind them, but technical words introduced during the past two and a half centuries remain essentially

the same. Thus, for example, 'petal' (*petalum*), 'anther' (*anthera*), 'pollen' (*pollen*), 'carpel' (*carpellum*) and 'stigma' (*stigma*) are 'péiale', 'anthère', 'pollen', 'carpelle' and 'stigmate' in French, 'petalo', 'anthera', 'polline', 'carpello' and 'stigma' in Italian, 'péala' (Port.), 'péalo' (Span.), 'antera', 'polen', 'carpelo' and 'estigma' in Portuguese and Spanish, 'petale', 'anterele', 'polenul', 'carpela' and 'stigmatul' in Romanian.

### SUMMARY

By the end of the eighteenth century, botanical Latin had thus acquired a vocabulary based indeed on the seventeenth-century legacies of Ray and Tournefort, but enlarged and elaborated by Linnaeus and his successors to meet the needs of most botanists concerned with the flowering-plants in the nineteenth century. Accordingly, when Humboldt and Bonpland returned to Europe in 1804, bringing back from tropical America a multitude of plants new to science, botanical Latin provided the ideal medium for their publication, and Kunth's *Nova Genera et Species Plantarum* (1816-25) describing these plants became the forerunner of numerous other elaborate works likewise in botanical Latin which laid the foundations of tropical botany. Study of algae, fungi, lichens and mosses with the aid of the microscope revealed the same need for new terms as had earlier become evident in phanerogamic botany and likewise led to the creation of a new specialized vocabulary, Latin in form but mostly Greek in origin, used in a series of fundamental works by authors of many nationalities. This rich technical vocabulary, resting on hard-won knowledge gained largely since 1650 and hence unknown to the ancients, sets botanical Latin apart from classical Latin. It possesses its own standard orthography partly derived from medieval Latin which also diverges from that of classical Latin. The limitation of its subject matter and the adoption of a set formal static method of description for ease of comparison is alien indeed to the spirit of the great Latin literature of the Golden and Silver Ages; it reflects the scientific rationalizing attitude of the first half of the eighteenth century, the period of its birth, and above all the orderly methodical systematizing didactic intellect of Carl Linnaeus, who more than any other man established its present form. As Alphonse de Candolle wrote in 1880: 'C'est le latin arrangé par Linné à l'usage des descriptions. . . . Une langue aussi universelle, aussi précise, aussi bien adaptée par un homme de génie aux besoins de la science ne doit pas être abandonnée' (*La Phytographie*, 35; 1880). Grammatically, botanical Latin closely follows classical precedent. 'The Latin language', says Michael Grant, with its classical literature in mind, 'is extremely forcible and expressive, very precise when employed,

as it was not always, in its tersest form—and at the same time very compact; capable of saying much and of saying it well in a brief space.' In maintaining these virtues so effectively, botanical Latin joins hands across the centuries with the Latin of ancient Rome.

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## CHAPTER IV

## The Latin Alphabet and Pronunciation

Origin of the Latin alphabet, p. 51—The letters J, U and W, p. 51—Pronunciation, p. 53—References, p. 56.

## ORIGIN OF THE LATIN ALPHABET

The Latin alphabet by the time of Cicero (106-43 B.C.) consisted of 21 letters derived and modified from the Greek alphabet (see Chapter XIX), possibly through direct contact with the Greek colonists at Cumae in the Bay of Naples, more probably through the intermediary of the widely trading piratical Etruscans of northern Italy, who had contended with the Greeks for maritime supremacy while the Romans were but land-bound farmers in Latium and who had already adopted an alphabet of Greek origin in the seventh century B.C. These letters were the consonants B, C, D, F, G, H, K, L, M, N, P, Q, R, S, T, X, the vowels A, E, O, and the letters I and V which stood for the vowel and consonant sounds now differentiated as I and J, U and W. The Greek alphabet of 24 letters included three, the aspirates  $\theta$  (theta),  $\phi$  (phi) and  $\chi$  (chi), which represented sounds absent from early Latin. Having no phonetic use for them, the Romans converted them into numerals; these ultimately became C (100), M (1,000) and L (50). The Greek  $\kappa$  (kappa) passed out of use: it persisted only in a few words and then only before A. The Roman conquest of Greece in 146 B.C., the bringing of educated Greeks to Rome as slaves, the prestige of Greek culture, the later massive Greek settlements in Rome and the consequent need to transliterate Greek words and names into the inadequate Latin alphabet made the Romans add to it the Greek letters  $\upsilon$  (upsilon) and  $\zeta$  (zeta) as Y and Z and improvise the equivalents TH, PH and CH for the letters  $\theta$ ,  $\phi$  and  $\chi$  which they had earlier discarded. E served for both the Greek  $\epsilon$  (epsilon) and  $\eta$  (eta); likewise O transliterated both the Greek  $\circ$  (omicron) and  $\omega$  (omega).

## THE LETTERS J, U AND W

The letters J, U (as distinct from V) and W did not exist in the Latin alphabet. The letter J as regards its origin 'is a comparatively late

modification of the letter I. In the ancient Roman alphabet, I, besides its vowel value in *ibidem*, *militis*, had the kindred consonantal value of modern English Y, as in *iactus*, *iam*, *Iouem*, *iustus*, *adiūra*, *maiōr*, *peior*. . . . The differentiation was made first in Spanish, where from the very introduction of printing (i.e. in books of 1485-7) we see j used for the consonant and i only for the vowel. For the capitals I had at first to stand for both . . . but before 1600 a capital J consonant began to appear in Spanish' (*New Engl. Dict.* under J; 1901). U and V were originally interchangeable forms of the one letter which was employed both for a vowel and the consonant. 'During the sixteenth century, however, continental printers began to distinguish between *u* and *v*, using the former as a vowel and the latter as a consonant. The distinction is found in Italian printing as early as 1524, but its general introduction dates from 1559-60, when it was employed in the *Grammatica* of Ramus. . . . In capitals, however, V for some time continued to serve in the old double function' (*New Engl. Dict.* under U; 1926). The letter W is of medieval origin. 'When in the 7th century, the Latin alphabet was first applied to the writing of English, it became necessary to provide a symbol for the sound (w) which did not exist in contemporary Latin. The sound, a gutturally modified bilabial voiced spirant, is acoustically almost identical with the de-vocalized (u) or (u), which was the sound originally expressed by the Roman U or V as a consonant or symbol, but before the 7th century this Latin sound had developed into (v). The simple *u* or *v* could not be used without ambiguity to represent (w). . . . The ordinary sign for (w) was at first *uu*. . . . The *uu* was carried from England to the continent, being used for the sound (w) in the German dialects and in French proper names and other words of Teutonic and Celtic origin. In the 11th century the ligatured form was introduced into England by Norman scribes' (*New Engl. Dict.* under W; 1928). J, I, U and V with the values thus associated with them are commonly used in botanical Latin. It should be noted, however, that the eighteenth-century printers of Linnaeus's works employed *i* and *j* and *u* and *v* somewhat indiscriminately. At this period *i* often came at the beginning of a word, even though the consonant *j* was intended and *j* often within the word, usually after a vowel but sometimes after a consonant, even though the vowel *i* was intended, as in RHEEDJA and DELPHINJUM. Care should be taken to distinguish between 'f' and 'f' in works before 1800. The 'f' was used in place of 's' at the beginning of a word and often within it but 's' at the end. Notes on these characters as used in English printing will be found in R. B. McKerrow's *Introduction to Bibliography*, 309-318 (1927).

At first the Latin alphabet existed only in the form of capitals

(majuscules), admirable indeed for monumental inscriptions on stone such as the Column of Trajan but much less so for rapid script on papyrus and vellum. By the eighth century A.D. alternative small letters (minuscules, 'lower-case' letters) had developed; those known as Caroline minuscules, which are ancestral to those of modern printing, became firmly and widely established in western Europe during the reign of Charlemagne (c. 742-814). The modern use of capital and lower-case letters together, as in generic names, has no classical precedent. The sloping letters known as *italic*, in which botanical names are usually printed, derive from the hand-writing of fifteenth-century Italian scholars and were made popular by the editions of the classics printed in them by Aldus Manutius (1450-1515) and his sons.

### PRONUNCIATION<sup>1</sup>

Botanical Latin is essentially a written language, but the scientific names of plants often occur in speech. How they are pronounced really matters little provided they sound pleasant and are understood by all concerned. This is most likely to be attained by pronouncing them in accordance with the rules of classical Latin pronunciation. There are, however, several systems, since people tend to pronounce Latin words by analogy with words of their own language. Even within the Roman Empire when Latin displaced native languages having different speech rhythms there must have been great regional diversities of pronunciation, as indeed is evident from the different Romance languages, Spanish, Italian, etc., descended from it. Lack of uniformity in pronunciation led Erasmus in 1528 to publish his *De recta Latini Graecique Sermonis Pronunciatione* in which he described how a French ambassador at the court of the Emperor Maximilian made a speech in Latin 'with so Gallic an accent that the Italians present thought he were speaking French'; a German, called upon to reply, sounded as if he was speaking German; 'a Dane who spoke third might have been a Scotchman, so marvellously did he reproduce the pronunciation of Scotland' (cf. Brittain, *Latin in Church*, 26-30). Nevertheless, people were able to make themselves understood despite such differences of pronunciation. In 1608 Thomas Coryat, the author of *Coryat's Crudities*, travelled widely in Europe using Latin as an international language. In 1735-6 Linnaeus visited north Germany, Holland, England and France, likewise using Latin as his major tongue, for he knew little other than his native Swedish.

In English-speaking countries there exist two main systems, the

<sup>1</sup> Most of this section is reproduced by permission from the writer's article on the 'Pronunciation of botanical names' in R.H.S., *Dict. Gard. Suppl.*, 301-302 (1956).

traditional English pronunciation generally used by gardeners and botanists and the 'reformed' or 'restored' academic pronunciation adopted by classical scholars as presenting 'a reasonably close approximation to the actual sounds of the language as spoken by educated Romans'. This academic pronunciation comes closer to the usual Latin pronunciation of Continental people than does the conventional English pronunciation.

The pronunciation of a word is determined by the sounds of the individual letters, the length (quantity) of the vowels and the place of stress (accent). Vowels are described as 'long' and often marked with a <sup>~</sup> (e.g. *cāke*, *kīte*, *ēvil*, *vōte*) or 'short' and often marked with a <sup>˘</sup> (e.g. *căt*, *kīt*, *ēgg*, *pōt*), according to the relative time spent in saying them.

Words containing more than one vowel or diphthong (i.e. two vowels pronounced as one, e.g. *ae*, *au*, *ei*, *eu*, *oe*, *ui*) are divided into *syllables*. Thus *al-bus*, *ple-nus*, *mag-nus*, etc., are words of two syllables, and the *stress*, indicated by the sign ' (or by the grave ` to indicate a long vowel in the stressed syllable and the acute ' to indicate a short vowel), in words of two syllables falls on the first syllable. Most words consist of several syllables, e.g. *al-bi-dus*, *ple-ni-flo-rus*, *mag-ni-fo-li-us*, *ros-ma-ri-ni-for-mis*, *o-phi-o-glos-so-i-des*, *Con-stan-ti-no-po-li-ta-nus*.

In Latin every vowel is pronounced, hence *cō-tō-nē'-ās-ter* and not *cot-on-easter*. The same applies to the Latinized Greek ending *-ō-i'-dēs* (not *-oi-des*) meaning 'like, having the form of'.

In classical Latin words of several syllables the stress falls on the syllable next to the last one (the penultimate) when this syllable is long (i.e. when it ends in a long vowel or diphthong, e.g. *for-mō'-sus*, or when two consonants separate the two last vowels, e.g. *cru-ēn'tus*), but falls on the last syllable but two (the antepenultimate) when the last but one is short, e.g. *flō'-ri-dus*, *la-ti-fō'-li-us*, *sil-vā'-ti-cus*. Diphthongs are treated as long vowels. When, however, two vowels come together in a Latin word without forming a diphthong, the first is short, e.g. *car'-nē-us*; in a word of Greek origin, this does not apply, hence *gi-gan-tē'-us*. The *-inus* ending also varies, being *ī* in some Latin words, e.g. *al-pī'-nus*, but *ī* in others, e.g. *se-ro'-tī-nus*; in words of Greek origin, e.g. *bom-by'-ci-nus*, *hy-a-cin'-thī-nus*, it is usually *ī*.

The above rules of accentuation apply both to the traditional English and the reformed academic pronunciation of Latin. The consonants *b*, *d*, *f*, *h*, *l*, *m*, *n*, *p*, *qu*, *z* are pronounced as in English. The following Table indicates the main differences between the two methods of pronunciation :

## REFORMED ACADEMIC

ā as in *father*  
ā as in *āpart*

## TRADITIONAL ENGLISH

*fāte*  
*fāt*

## REFORMED ACADEMIC

ae as <i>ai</i> in <i>aisle</i>	as <i>ea</i> in <i>meat</i>
au as in <i>house</i>	as <i>aw</i> in <i>bawl</i>
c always as in <i>cat</i>	{ before <i>a</i> , <i>o</i> , <i>u</i> as in <i>cat</i>
ch (of Greek words) as <i>k</i> or <i>k-h</i> (if possible)	{ before <i>e</i> , <i>i</i> , <i>y</i> as in <i>centre</i>
ē as in <i>they</i>	as <i>k</i> or <i>ch</i>
ě as in <i>pět</i>	
ei as in <i>rein</i>	
g always as in <i>go</i>	<i>mē</i>
i as in <i>machine</i>	<i>pět</i>
ī as in <i>pīt</i>	as in <i>height</i>
(consonant <i>i</i> ) as <i>y</i> in <i>yellow</i>	{ hard before <i>a</i> , <i>o</i> , <i>u</i> as in <i>gap</i> , <i>go</i>
ng as in <i>finger</i>	{ soft before <i>e</i> , <i>i</i> , <i>y</i> as in <i>gem</i> , <i>giro</i>
ō as in <i>nōte</i>	<i>īce</i>
ō as in <i>nōt</i>	<i>pīt</i>
oe as <i>oi</i> in <i>toil</i>	<i>j</i> in <i>jam</i>
ph as <i>p</i> or <i>p-h</i> if possible	<i>finger</i>
r always trilled	<i>nōte</i>
s as in <i>sit</i> , <i>gas</i>	<i>nōt</i>
t as in <i>table</i> , <i>native</i>	as <i>ee</i> in <i>bee</i>
ū as in <i>brūte</i>	like <i>f</i>
ū as in <i>füll</i>	
ui as <i>oui</i> (French), <i>we</i>	<i>sit</i> , <i>gas</i>
v (consonant <i>u</i> ) as <i>w</i>	<i>table</i> but <i>ti</i> within a word as in <i>nation</i>
ÿ as <i>u</i> in French <i>pur</i>	<i>brūte</i>
ÿ as in French <i>du</i>	<i>tūb</i>

## TRADITIONAL ENGLISH

as <i>aw</i> in <i>bawl</i>	as <i>aw</i> in <i>bawl</i>
{ before <i>a</i> , <i>o</i> , <i>u</i> as in <i>cat</i>	{ before <i>e</i> , <i>i</i> , <i>y</i> as in <i>centre</i>
as <i>k</i> or <i>ch</i>	as <i>k</i> or <i>ch</i>
<i>mē</i>	
<i>pět</i>	as in <i>height</i>
{ hard before <i>a</i> , <i>o</i> , <i>u</i> as in <i>gap</i> , <i>go</i>	{ hard before <i>a</i> , <i>o</i> , <i>u</i> as in <i>gap</i> , <i>go</i>
{ soft before <i>e</i> , <i>i</i> , <i>y</i> as in <i>gem</i> , <i>giro</i>	{ soft before <i>e</i> , <i>i</i> , <i>y</i> as in <i>gem</i> , <i>giro</i>
<i>īce</i>	<i>īce</i>
<i>pīt</i>	<i>j</i> in <i>jam</i>
<i>finger</i>	<i>finger</i>
<i>nōte</i>	<i>nōte</i>
<i>nōt</i>	as <i>ee</i> in <i>bee</i>
like <i>f</i>	like <i>f</i>
<i>sit</i> , <i>gas</i>	<i>sit</i> , <i>gas</i>
<i>table</i> but <i>ti</i> within a word as in <i>nation</i>	<i>table</i> but <i>ti</i> within a word as in <i>nation</i>
<i>brūte</i>	<i>brūte</i>
<i>tūb</i>	<i>ruin</i>
<i>ruin</i>	as in <i>van</i>
as in <i>van</i>	as in <i>cīpher</i>
as in <i>cīpher</i>	as in <i>cīnical</i>

The pronunciation of Church Latin is based on modern Italian pronunciation, *c* before *i* and *e* being accordingly pronounced as the English *ch* and not as *s* (the conventional English pronunciation) or *k* (the reformed pronunciation).

Whichever system is adopted, the word will sound best and be least objectionable to scholars if a distinction is made between long and short vowels as above and the stress put in the right place according to classical Latin procedure. To do this, reference must be made to a standard dictionary such as C. T. Lewis and C. Short, *Latin Dictionary*, to the works cited below, or to a Flora, such as M. L. Fernald, *Gray's Manual of Botany* (8th ed., 1950), giving careful attention to accentuation.

These rules cannot satisfactorily be applied to all generic names and specific epithets commemorating persons. About 80 per cent of generic names and 30 per cent of specific epithets come from languages other than Latin and Greek. A simple and consistent method of

pronouncing them does not exist, because different peoples use the same letters for different sounds and different letters for the same sounds. The *cz* of Polish corresponds to the English *ch* and the Italian *c* before *i* or *e*, but the English *ch* is not the same as the French *ch* or the Italian *ch* before *i* or *e*. The ideal method with most names commemorating persons is to pronounce them as nearly as possible like the original name but with a Latin ending. The uncouth-looking *Warszewicze* will then be euphoniously pronounced as *var-shē-vi-chēl'-la* and not uncouthly as *wars-zew-ic-zell-a*. The main difficulty is that this method involves giving a German pronunciation to *Heuchera*, a French pronunciation to *Choisy*, a Scottish pronunciation to *Menziesia*, an Italian pronunciation to *cesatianus*, a Polish pronunciation to *przewalskii*, etc., and to do this is more than most botanists and gardeners can manage.

The ending *-ii* or *iae* of most epithets commemorating persons also creates difficulty if the rules of Latin accentuation are applied strictly, since the accent will then fall on the syllable before the *-ii* or *iae*, which is not its usual place in most personal names.

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#### PART TWO GRAMMAR

## CHAPTER V

# Nouns

A word which stands for anything that has an existence  
is a Noun.

WILLIAM COBBETT, *Grammar* (1819)

Declension and agreement of nouns and adjectives, p. 59—Gender, p. 60—Stem and root, p. 60—Stems of Third-Decension nouns, p. 61—Declension, p. 63—Case, p. 64—Table of case-endings, p. 68—First Declension, p. 68—Second Declension, p. 70—Third Declension, p. 74—Fourth Declension, p. 89—Fifth Declension, p. 90.

### DECLENSION AND AGREEMENT OF NOUNS AND ADJECTIVES

Latin is a highly inflected language, and its nouns (*substantiva*) have *gender*, *number* and *case*. This means that the ending of a Latin noun changes not only to indicate that two or more things are being mentioned, as in English ‘cow, cows’, ‘ox, oxen’, but also to indicate the noun’s relation to other words in the sentence and to convey meanings which are expressed in English by its position and by the use of prepositions such as ‘of’, ‘by’, ‘to’, ‘with’. It also means that adjectives associated with a noun must be given corresponding endings so that the noun and its adjectives agree in gender, number and case. For example, in the sentences ‘the white flower is fragrant’ and ‘the white flower has fragrance’, the word ‘flower’ is singular in *number*, because it refers to only one flower, and is said to be of nominative *case*, because it is the subject of the sentence; the corresponding Latin word is *flos*, which is regarded as masculine and hence is said to be of masculine *gender*. The ‘white flower’ of these sentences would be *flos albus* in Latin. In such a sentence as ‘I pick the white flower’, the word ‘I’ is the subject and ‘flower’ the object, although the word ‘flower’ itself undergoes no change in English. In Latin ‘white flower’ as the direct object of the sentence would be *florem album*, i.e. *flos albus* changed into the accusative case. ‘Of the white flower’ in Latin would be *floris albi*, i.e. in the genitive or possessive case. ‘To the white flower’ would be expressed as *flori albo*, i.e. by use of the dative case. ‘With the white flower’ would be expressed as *flore albo*, i.e. by use of the ablative case. There are corresponding changes in the form of

Latin words when they refer to more than one thing. Thus referring to 'white flowers' we have *flores albi* (nominative plural), *flores albos* (accusative plural), *florum alborum* (genitive plural), *floribus albis* (dative and ablative plural). From this it will be evident that the use of the correct ending to a word is very important for conveying the intended meaning in Latin.

#### Gender

Latin words denoting a male, e.g. *vir* (man), *taurus* (bull), are masculine: words denoting a female, e.g. *uxor* (wife), *vacca* (cow), are feminine. In this they correspond to the natural gender or sex of the object concerned. Grammatical gender metaphorically classifies words denoting inanimate objects or qualities which have no natural gender as being nevertheless *masculine* (m.), *feminine* (f.) or *neuter* (n.). The gender assigned to a noun often relates to its ending in the nominative singular or to its meaning, but may be arbitrary. Thus most Latin words ending in *-us* and *-er* are masculine, e.g. *ager* (field), *hortus* (garden), *stylus* (style), *fructus* (fruit); classical names of trees ending in *-us*, such as *juniperus*, *pinus*, *prunus*, *quercus*, are feminine. Most Latin words ending in *-a* and *-es* are feminine, e.g. *corolla* (corolla), *species* (species); most words of Greek origin ending in *-ma*, e.g. *rhizoma* (rhizome), *stigma* (stigma), are neuter. Nouns ending in *-um* and *-u* are neuter, e.g. *herbarium* (herbarium), *petalum* (petal), *sepalum* (sepal), *cornu* (horn). Names of most rivers and mountains (unless they end in *-a* or *-e*) are masculine; those of most countries, islands, cities and trees are feminine, but the numerous exceptions make unreliable most general rules for gender. Schoolboys used to learn rhymes such as the following as aids to memory:

A woman, island, country, tree  
and city feminine we see:  
Pēnelopē, Cyprus, Germānia, laurus, Athēnae.

#### Stem and Root

Etymologists call a *stem* that basic part of a Latin word which remains unchanged despite changes in the word as a whole made to express differences of case and number; the endings attached to it to express different meanings—metaphorically like basal leaves, shade leaves, sun leaves, bracts, all of which can be attached to the same stem in a plant—are called *case endings* or *inflexions*. The stem is common to all forms of the same word, or the stem of the nominative singular may be slightly different from the stem of the other cases; thus the stem of *flos* is *flos* in the nominative singular but *flor-* for all the other cases; its case-endings in the singular are *-em* (accusative), *-is* (genitive),

*-i* (dative) and *-e* (ablative) and in the plural are *-es* (nominative and accusative), *-um* (genitive) and *-ibus* (dative and ablative). The term *root* is used by etymologists to denote a part of the stem common to several different words of related meaning; as in plants, several stems may arise from the same root. In a short word the stem and the root may be the same. Thus the stem of *albus* is *alb-*, which is the root not only of *albus* (white) but also of *albor* (whiteness), *albumen* (white of egg), *alburnum* (sap-wood), etc.

In forming compounds the stem of the word as revealed in the genitive case is used. Thus *crux* (cross) has the genitive singular *crucis*, of which *cruc-* is the stem and *-is* is the genitive case-ending; from this are derived *cruciatus* (cross-shaped), *crucifer* (cross-bearing), *cruciformis* (cross-shaped), *crucilabris* (with a cross-shaped lip) and *Cruciarella*. The names of families are formed by adding the ending *-aceae* (a nominative plural feminine adjectival ending) to the stem of a legitimate name of an included genus. The stem of *Rosa* (genitive singular *Rosae*) is *Ros-*, hence the family name *Rosaceae*; the stem of *Cannabis* (genitive singular *Cannabis*) is *Cannab-*, hence the family name *Cannabaceae*; the stem of *Salix* (genitive singular *Salicis*) is *Salic-*, hence the family name *Salicaceae*. Words derived from the same Greek element may differ slightly in their stem, according to whether this terminal element was treated by the original author simply as a transliterated Greek word, e.g. *Gyrostemon* (stem *Gyrostemon-*) or was deliberately given a Latin form distinct from that of the corresponding Greek word, e.g. *Podostemum* (stem *Podostem-*), hence the family names *Gyrostemonaceae* and *Podostemaceae*.

#### Stems of Third Declension nouns

Nouns of the Third Declension (see below) mostly have the stem of the genitive, etc., different from the nominative singular. According to the phonetic nature of the letter ending this stem they are classified (e.g. in Kennedy's *Revised Latin Primer* and in the Vocabulary of the present work) into eleven groups.

(i) Stems ending in **c** or **g** (palatals), e.g. *apex* (tip), stem *apic-*, gen. sing. *apicis*; *calyx* (calyx), stem *calyc-*, gen. sing. *calycis*; *Carex* (sedge), stem *Caric-*, gen. sing. *caricis*; *grex* (flock), stem *greg-*, gen. sing. *gregis*; *radix* (root), stem *radic-*, gen. sing. *radicis*; *Panax*, stem *Panac-*, gen. sing. *Panacis*; *spadix* (spadix), stem *spadic-*, gen. sing. *spadicis*. See below, pp. 79, 81.

(ii) Stems ending in **t** or **d** (dentals), e.g. *Abies* (spruce), stem *Abiet-*, gen. sing. *Abietis*; *Cycas* (cycad), stem *Cycad-*, gen. sing. *Cycadis*; *-myces* (-fungus), stem *-mycet-*, gen. sing. *-mycetis*; *pes* (foot), stem *ped-*, gen. sing. *pedis*; *phialis* (phialide), stem *phialid-*, gen.

sing. *phialidis*; *stipes* (stipe), stem *stipit-*, gen. sing. *stipitis*; *varietas* (variety), stem *varietat-*, gen. sing. *varietatis*. See below, pp. 76, 78, 81.

(iii) Stems ending in **b** or **p** (labials), e.g. *ops* (help), stem *op-*, gen. sing. *opis*; *princeps* (the chief), stem *princip-*, gen. sing. *principis*. See below, pp. 85, 86.

(iv) Stems ending in the fricative **s** changing usually to **r**, e.g. *flos* (flower), stem *flor-*, gen. sing. *floris*; *genus* (genus), stem *gener-*, gen. sing. *generis*; *latus* (side), stem *later-*, gen. sing. *lateris*. See below, pp. 85, 87.

(v) Stems ending in **l** or **r** (liquids), e.g. *arbor* (tree), stem *arbor-*, gen. sing. *arboris*; *auctor* (author), stem *auctor-*, gen. sing. *auctoris*; *color* (colour), stem *color-*, gen. sing. *coloris*; *Mucor*, stem *Mucor-*, gen. sing. *Mucoris*; *odor* (smell), stem *odor-*, gen. sing. *odoris*; *sal* (salt), stem *sal-*, gen. sing. *salis*; *ver* (spring), stem *ver-*, gen. sing. *veris*. See below, pp. 75, 77, 84.

(vi) Stems ending in **n** or **m** (nasals), e.g. *aestivatio* (aestivation), stem *aestivation-*, gen. sing. *aestivationis*; *Arundo* (reed), stem *Arundin-*, gen. sing. *Arundinis*; *crassitudo* (thickness), stem *crassitudin-*, gen. sing. *crassitudinis*; *Cyclamen* (sowbread), stem *Cyclamin-*, gen. sing. *Cyclaminis*; *descriptio* (description), stem *description-*, gen. sing. *descriptionis*; *embryo* (embryo), stem *embryon-*, gen. sing. *embryonis*; *hiems* (winter), stem *hiem-*, gen. sing. *hiemis*; *icon* (illustration), stem *icon-*, gen. sing. *iconis*; *longitudo* (length), stem *longitudin-*, gen. sing. *longitudinis*; *margo* (edge), stem *margin-*, gen. sing. *marginis*; *Plantago* (plantain), stem *Plantagin-*, gen. sing. *Plantaginis*; *pollen* (pollen), stem *pollin-*, gen. sing. *pollinis*; *semen* (seed), stem *semin-*, gen. sing. *seminis*; *Senecio* (groundsel), stem *Senecion-*, gen. sing. *Senecionis*; *specimen* (specimen), stem *specimin-*, gen. sing. *speciminis*; *stamen* (stamen), stem *stamin-*, gen. sing. *staminis*. See below, pp. 77, 83.

(vii) Stems of nouns with nominative singular in **-is**, genitive plural in **-ium**, e.g. *clavis* (key), stem *clav-*, gen. sing. *clavis*. See p. 80.

(viii) Stems of nouns with nominative singular in **-es** and genitive plural in **-ium**, e.g. *cautes* (rock), stem *caut-*, gen. sing. *cautis*. See p. 79.

(ix) Stems ending in two consonants and genitive plural ending in **-ium**, e.g. *dens* (tooth), stem *dent-*, gen. sing. *dentis*; *frons* (frond), stem *frond-*, gen. sing. *frondis*; *mons* (mountain), stem *mont-*, gen. sing. *montis*. See below, p. 86.

(x) Stems of nouns with nominative singular in **-e**, **-al** or **-ar** and genitive plural in **-ium**, e.g. *animal* (animal), stem *animal*, gen. sing. *animalis*; *calcar* (spur), stem *calcar-*, gen. sing. *calcaris*; *nectar* (nectar), stem *nectar-*, gen. sing. *nectaris*. See below pp. 75, 76.

Groups vii-x are kept apart principally on historical grounds as nouns with stems in *i*, as distinct from groups i-vi with consonant

stems, because they originally differed markedly in declension with **-im** instead of **-em**, **-i** instead of **-e**, **-is** instead of **-es** and **-ium** instead of **-um**, but the *i* of the stem survives only in the genitive plural; e.g. *mons* with stem *monti-* (now reduced to *mont-*) has genitive plural *montium*.

(xi) Stems ending in **-at** of neuter nouns of Greek origin with nominative singular ending in **-ma**, e.g. *Alisma* (water-plantain), stem *Alismat-*, gen. sing. *Alismatis*; *lemma* (lemma), stem *lemmat-*, gen. sing. *lemmatis*; **-nema** (-thread), stem *-nemat-*, gen. sing. *-nematis*; *rhizoma* (rhizome), stem *rhizomat-*, gen. sing. *rhizomatis*; **-sperma** (-seed), stem *-spermat-*, gen. sing. *spermatis*; *stigma* (stigma), stem *stigmat-*, gen. sing. *stigmatis*; *stoma* (stomate), stem *stomat-*, gen. sing. *stomatis*; *systema* (system), stem *systemat-*, gen. sing. *systematis*.

In all the groups above except vii and x the ablative singular is formed by adding **-e** to the stem, e.g. *apex*, stem *apic-*, abl. sing. *apice*; in group vii the ablative singular ends in *e* or *i*, in group x in **-i**, e.g. *calcar*, abl. sing. *calcari*. The dative and ablative plurals in all groups are formed by adding **-ibus** to the stem.

#### Declension

Many nouns have endings for the different cases the same as those of *flos* given above and are said to be of the same *declension*. Similarly many adjectives follow the same pattern as *albus*. Unfortunately many words follow other patterns. According to their case-endings, nouns may be divided into five main classes known as the First, Second, Third, Fourth and Fifth Declensions and indicated by the Roman numerals I, II, III, IV and V in the Vocabulary. The word *flos* provides an example of a masculine noun of Declension III ending in **-os** in the nominative case; its genitive is *floris*, its stem *flor-*; knowing this we can construct the other cases as needed by adding the appropriate case-endings of Declension III to its stem, e.g. *flor-* + nominative plural ending **-es** gives *flores*, *flor-* + ablative plural ending **-ibus** gives *floribus*. The word *albus* is the masculine nominative singular of an adjective with *alba* as its feminine and *album* as its neuter forms; the masculine and neuter forms are declined like (i.e. follow the same model or *paradigm* as) a noun of Declension II, but the feminine form like a noun of Declension I; such an adjective is indicated by the letter A in the Vocabulary. The word *viridis* (green) represents a second class of adjectives, indicated by the letter B in the Vocabulary, which are declined like Declension III nouns.

Latin dictionaries list nouns in their nominative singular form, then give the genitive case-ending or the whole genitive word when the nominative does not reveal the stem, then the gender and meaning,

e.g. *flos*, *floris*, *m.*, a flower. Facciolati and Forcellini in their great *Totius Latinitatis Lexicon* added a Roman numeral to indicate the declension, a procedure adopted from them in the Vocabulary of this book. The declension can, however, be ascertained directly from the genitive singular case-endings: I, *-ae*; II, *-i*; III, *-is*; IV, *-us*; V, *ei*.

Confronted then with a word of which we wish to use the ablative plural, e.g. to translate 'with veins' into Latin, we first ascertain to which declension it belongs. Thus *vena* (vein) has the genitive singular *venae*, i.e. ending in *-ae*, which refers it to Declension I. We next look down the Table of case-endings and find that for Declension I the ablative plural ending is *-is*; we then strip the word to its stem, here *ven-*, and add the appropriate ending to this, *venis* resulting.

An adjective associated with the noun must agree with it in gender, number and case. Thus 'with white veins' would be translated as *venis albis*; 'with green veins' would, however, be *venis viridibus*, because the adjective *viridis* (green), belonging to Group B above, does not follow the same model as *albus*, belonging to Group A above.

#### Case

*Use of cases.* In English, as stated above, the relation of a noun to other nouns in a sentence is usually indicated and its meaning accordingly modified by the prepositions 'of', 'by', 'for', etc., whereas in Latin this is done wholly or partly by *case-endings* or *inflexions*, such endings as *-a*, *-am*, *-ae*, *-as*, *-arum*, *-i*, *-o*, *-ibus*, etc., added to the stem of the noun. Particular kinds of endings have particular meanings associated with them. In Latin they belong to six types or *cases*: the *Nominative* (nom.), the *Vocative* (not used in botanical Latin), the *Accusative* (acc.), the *Genitive* (gen.), the *Dative* (dat.) and the *Ablative* (abl.).

The *NOMINATIVE* is the case of the subject; it is the case under which a word is entered in dictionaries. As Cobbett said: 'A noun is in the *Nominative* case, when it denotes a person, or thing, which *does* something or *is* something; as *Richard strikes*; *Richard is good*.' Or *the plant grows* (in Latin *planta crescit*) or *the plant is tall* (*planta est alta*).

The *ACCUSATIVE* is usually described as the case of the direct object of a sentence, i.e. 'when the person or thing that it means or denotes is the *object*, or *end*, of some act or of some movement, of some kind or other' (Cobbett). Thus in the description *radix longa caulem singulum edens* (root long a stem single putting forth), the *caulem* (acc. *caulem*) is treated as the object of an act or process (*edens*, present participle of the verb *edo*) done by the subject *radix*; hence *radix* is kept in the nominative but instead of *caulis* its accusative *caulem* is used. To quote E. C. Woodcock, here 'the accusative is used as a mere grammatical sign, to indicate the direct object of a verb'.

The accusative also indicates the area over which something is done or occurs or to which it extends or aims. 'The word in the accusative, with or without the aid of a preposition, performs the function of an *adverb*, indicating the goal, direction, or extent of a movement or action, in space or time' (Woodcock). A noun associated in meaning with certain prepositions having this kind of implication, e.g. *ad* (to), *ante* (before), *circa* (about), *inter* (among), *ob* (on account of), *per* (through), *post* (after), *supra* (above), *versus* (towards), is always used in the accusative case. Thus the phrase *apicem versus* (towards the tip), expressing direction, employs the accusative of *apex* (tip); the phrase *per totam longitudinem* (through or over the whole length) employs the accusative of *longitudo* (length). The names of towns and small islands when taken as a point reached are put in the accusative usually without a preposition, e.g. *extensis Delum* (it extends to Delos), but countries, regions and large islands, being regarded as areas on which many points can be reached, require the addition of a preposition such as *in* or *ad*, e.g. *ad Graeciam extensa* (reaching to Greece).

The accusative singular mostly ends in *-am*, *-um*, *-em* or *-im*, less often in *-e*, *-l*, *-r* or *-u*; the accusative plural ends in *-as*, *-os*, *-a*, *-es*, *-ia*, *-us* or *-ua*.

The *GENITIVE* is the possessive case, with the meaning 'of' or 'belonging to' (genitive of property; possessive genitive). 'A noun is in the *Possessive* case when it names a person or thing that possesses some other person or thing, or when there is one of the persons or things belonging to the other; as in *Richard's hat*; the *mountain's top*; the *nation's fleet*. Here *Richard*, *mountain* and *nation* are in the *Possessive* case because they denote persons or things which possess other persons or things, or have other persons or things belonging to them' (Cobbett). Thus the 'tube of the calyx' or 'the tube possessed by the calyx' is translated into botanical Latin as *tubus calycis* or *calycis tubus*, the genitive singular of *calyx* being *calycis*. Its function here is that of an adjective, and the same meaning can often be expressed by the use of a related adjective, e.g. *tubus calycinus* (the calycine tube). As stated by Woodcock, 'the word or words in the genitive define, describe or classify the thing (or person) denoted by noun qualified. The genitive inflexion thus turns a noun or a pronoun into a sort of indeclinable adjective, which is sometimes interchangeable with an adjective.' In such a phrase as *opus magni laboris* (a work of great toil) the genitive is used descriptively, indicating size or quality (genitive of description or quality).

The genitive is much used in specific epithets commemorating persons, e.g. *Euphrasia kernerii* (the eyebright of Kerner; Kerner's

eyebright), *Paeonia clusii* (Clusius's peony), *Rosa beatricis* (the rose of Beatrix), *Scabiosa olgae* (Olga's scabious), *Tiarella wherryi* (Wherry's tiarella), *Echeveria baileyorum* (Echeveria of the Baileys). It is less used for geographical epithets, e.g. *Syringa emodi* (the lilac of the Himalaya, the *Emodus* of classical geographers). In mycology a generic name or hyphenated specific name in the genitive<sup>1</sup> is often employed as a specific epithet to indicate the host of a parasitic fungus, e.g. *Phoma betae* (*Phoma* on Beta), *Fusarium lini* (*Fusarium* on Linum), *Septoria apii-graveolentis* (*Septoria* on Apium graveolens), *Phytophthora cactorum* (*Phytophthora* on cacti), *Urocystis anemones* (*Urocystis* on Anemone), *Chrysomyza abietis* (*Chrysomyza* on Abies), *Puccinia iridis* (*Puccinia* on Iris), *Ophiobolus graminis* (*Ophiobolus* on grass), *Monoicomycetes echidnoglossae* (*Monoicomycetes* on Echidnoglossa), etc.

The genitive singular ends in *-ae*, *-i*, *-is*, *-us* or *-ei* (in *-os* only in a few words transliterated from Greek), the genitive plural in *-arum*, *-orum*, *-um*, *-ium*, *-uum* or *-erum*.

The DATIVE is the case of the indirect object, with the meaning of 'for' or 'to', and denotes that person or thing to or for whom or which something is done. In botanical Latin it is mostly used to indicate affinity, e.g. *Hypno subulato simile* (to *Hypnum* subulatum similar), *Adonidi vernali affinis* (to *Adonis* vernalis related). A special use is the 'dative of possession', apparently intended to emphasize the thing possessed and not the possessor, as when the older authors put *mihi* (for me, to me) or *nobis* (for us, to us) immediately after a new botanical name published by them.

The dative is never used with a preposition. The dative singular

<sup>1</sup> For some generic names more than one genitive singular form appears in the literature, e.g. *Abutilonis* and *Abutili* for *Abutilon*, *Galeobdoli* and *Galeobdoloni* for *Galeobdolon*. Sometimes the form standard in botanical literature differs from that of antiquity, e.g. *Orchidis* instead of *Orchis* for *Orchis*. In classical Latin, however, a few words had alternative genitive singular forms, e.g. *ficus* (fig), gen. *fici* and *ficus* (belly), gen. *gasteris* and *gastri*, *quercus* (oak), gen. *quercus* and *querci*, *tigris* (tiger), gen. *tigris* and *tigridis*. Hence for some names in use alternative genitive forms can be accepted as permissible; for new names, with epithets in the genitive, convenience will be best served by adopting the most generally used form, e.g. *Phragmitis* rather than *Phragmitidis* for *Phragmites*, *Stachydis* rather than *Stachyos* for *Stachys*, which can often be ascertained from C. A. J. A. Oudemans, *Enumeratio systematica Fungorum* (1919-24). H. K. Airy Shaw and F. C. Deighton have proposed in *Taxon* 12: 291 (1963) that generic names ending in *-is* or *-ys* should be treated as having the stem *-id* or *-yd* and hence the genitive ending *-idis* or *-ydis*, e.g. *Achlydis*, gen. *Achlydis*, *Coris*, gen. *Coridis*, despite a lack of support in classical usage, except that names ending in *-charis* retain the stem *-it*, e.g. *Nomocharis*, gen. *Nomocharitis*, and compounds of *-basis*, *-caulis* and other technical Latin terms retain their customary stem, e.g. *Physocaulis*, gen. *Physocaulis*. Certain names, such as *Azedarach*, *Cacao*, *Gale*, *Kali*, *Manihot*, *Muscaria*, *Quamoclit*, are best treated as indeclinable, i.e. as being the same as the nominative in all cases. Statements such as the following in Tournefort's *Institutiones Rei herbariae* (1700) provide a guide to pre-Linnaean usage: 'Abutili species sunt', 'Capparis species sunt', 'Cerithes species sunt', 'Colocynthidis species sunt', 'Galeopseos species sunt', 'Manihot species sunt', 'Menyanthis species sunt', 'Molles speciem unicam novi', 'Muscari species sunt', 'Nymphoidis species sunt', 'Petasitidis species sunt', 'Stachydis species sunt'.

ends in *-ae*, *-o*, *-i*, *-ui*, *-u* or *-ei*; the dative plural is always the same as the ablative plural and ends in *-is*, *-ibus* or *-ebus*.

The ABLATIVE is the case of the agent, with the meaning usually of 'with' (ablative of accompaniment and of description) but also of 'by' (ablative of instrument or means), 'in' (ablative of respect and of position) or 'from' (ablative of separation and of origin; the true ablative or 'taking away' case). These different functions of the ablative are the result of three originally distinct cases being assimilated into one.

The ablative is much used in diagnoses (see Chapter XIII) stating the essential features with which a species is provided, e.g. *Hypericum floribus trigynis, foliis lanceolatis, caule quadrangulo, pericarpiis coloratis* (*Hypericum* with flowers trigynous, with leaves lanceolate, with stem quadrangular, with pericarps coloured). Linnaean polynomials or phrase-names use the ablative in this manner. Descriptions are written in the nominative, with occasional subordinate clauses in the ablative, e.g. *caulis erectus glaber, inferne radicibus numerosis instructus, superne vaginis imbricatis obtectus* (stem erect glabrous, below with the numerous roots furnished, above with imbricate sheaths covered). Such a contrast between nominative and ablative is particularly useful when distinguishing between an organ and its parts. The ablative is also much used in diagnostic observations, indicating the features by which a new taxon differs from those already known, e.g. *genus novum floribus pentameris et stipulis connatis a generibus adhuc descriptis recedens* (new genus by pentamerous flowers and by connate stipules from genera up to now described diverging).

The ablative also serves to denote the place *where* or *in which* something happens or is to be found, e.g. *apice* (at the tip), *basi* (at the base), taking over the function of the old locative case.

The ablative singular ends in *-a* (the dative then in *-ae*), *-o*, *-ē* or *-i* (the dative then in *-i*), *-u* (the dative then in *-ui* or *-u*), *-ē* (the dative then in *-ēi*), the ablative plural (as likewise the dative plural) in *-is*, *-ibus*, *-ebus* or *-ubus*.

The LOCATIVE case, indicating position, was once independent but now resembles in form either the genitive or the ablative. It is thus explained by Woodcock: 'In the first or *-ā* declension *-i* was added to the stem, which produced in Old Latin *Romai*, etc. By a regular phonetic development this had become *Romae* by the beginning of the second century B.C., and was then indistinguishable in form from the genitive. Similarly the locative of the second or *-o* declension was *-oi* (cf. Greek *oikoi*, 'at home'), which became *-i* (e.g. *Arimini*, 'at Ariminum', *domi*, 'at home') and was again indistinguishable from the genitive. . . . Except in singular place-names of the first and second declension and a few other words such as *domi*, etc., the function of the

locative was taken over by the ablative.' The locative is used without a preposition when naming a town or small island or other place of limited extent at which something is done, and mainly appears on the title-pages of books to state where they are published, e.g. *Lipsiae* (at Leipzig), *Londini* (at London), *Olisippone* (at Lisbon). See Chapter XVII, p. 208.

## TABLE OF CASE ENDINGS

Adapted from Kennedy, *Revised Latin Primer*

Decl.	I	II	III		IV	V	Case Meaning
	A	O	Consonant	I	U	E	
SINGULAR							
Nom.	f.	m.	n.	m.f. n.	f.m. n.	m. n.	f.
Acc.	-a	-us(er)	-um	various	-is, es	-e, l, r	-us
	-am	-um	-um	-em var.	-em, im	-e, l, r	-u
Gen.	-ae	-i	-is		-is		-us
Dat.	-ae	-o	-i		-i		-ei
Abl.	-a	-o	-e	-i or e		-u	-e
PLURAL							
Nom.	-ae	-i	-a	-es	-a	-es	
Acc.	-as	-os	-a	-es	-a	-es	
				-es, is	-ia	-us	-ua
Gen.	-arum	-orum	-um	-ium	-uum	-erum	
Dat.	-is	-is	-ibus	-ibus	-ibus	-ibus	
Abl.	-is	-is	-ibus	-ibus	-ibus	-ibus	
EXAMPLES							
anthera	folium, n.	aestivatio, f.	animal, n.	varietas, f.	facies		
corolla	herbarium, n.	basis, f.	basis, f.	fides			
gluma		apex, m.	calcar, n.	ambitus, m.	res		
inflorescentia	hortus, m.	calyx, m.	caulis, m.	fructus, m.	series		
lamina	petalum, n.	rhizoma, n.	rhachis, f.	fructus, m.	species		
spatha	petiolum, m.	stamen, n.		habitudo, m.			
	pileus, m.	stigma, n.		lacus, m.			
		stolo, m.		sinus, m.			
		stoma, n.					
		tuber, n.					

## FIRST DECLENSION

Latin nouns of the First Declension (indicated by I in the Vocabulary) end in *-a* in the nominative singular. They are nearly all feminine. It should be noted that nouns of Greek origin ending in *-ma* are neuter, e.g. *lemma*, *nema*, *rhizoma*, *sperma*, *systema*, *trichoma*, and belong to the Third Declension (see p. 82), except when the *-ma* ending is a Latin rendering of the Greek feminine ending *-mē* (-μη).

## Singular

Nom.	anthera (f.)	the anther (as subject)
Acc.	antheram	the anther (as object)
Gen.	antherae	of the anther
Dat.	antherae	to or for the anther
Abl.	anthera	by, with or from the anther

## Plural

Nom.	antherae	the anthers (as subject)
Acc.	antheras	the anthers (as object)
Gen.	antherarum	of the anthers
Dat.	antheris	to or for the anthers
Abl.	antheris	by, with or from the anthers

The following feminine nouns are similarly declined: *ala*, wing; *axilla*, axil; *ascospora*, ascospore; *bacca*, berry; *bractea*, bract; *bracteola*, bracteole; *calyptra*, calyptra; *capsula*, capsule; *carina*, keel; *cellula*, cell; *chalaza*, chalaza; *coma*, terminal tuft; *corolla*, corolla; *costa*, main nerve; *cyma*, cyme; *differentia*, distinguishing feature; *drupa*, drupe; *familia*, family; *forma*, form; *galea*, hood, helm; *gemma*, bud; *gluma*, glume; *herba*, herbaceous plant; *hypha*, hypha; *inflorescentia*, inflorescence; *insula*, island; *lamina*, blade; *ligula*, ligule; *linea*, line,  $\frac{1}{2}$  inch; *macula*, spot, blotch; *ocrea*, ocrea; *placenta*, placenta; *planta*, plant; *radicula*, radicle; *rosula*, rosette; *seta*, bristle; *siliqua*, siliqua; *spatha*, spathe; *spica*, spike; *spina*, spine; *spora*, spore; *squama*, scale; *stipula*, stipule; *sylva*, wood; *umbella*, umbel; *vagina*, sheath; *valva*, valve; *vena*, vein; *volva*, volva; *zona*, band.

Generic names ending in *-a*, whether taken direct from Latin, as *Avena*, *Beta*, *Castanea*, *Ferula*, *Genista*, *Hedera*, *Malva*, *Rosa*, etc., or coined from personal names, as *Abelia*, *Anaxagorea*, *Bartsia*, *Bonnemaison*, *Fuchsia*, *Jania*, *Lejeunea*, *Lobelia*, *Watsonia*, or non-Latin words, as *Alchemilla*, *Akebia*, *Aucuba*, *Bersama*, *Dilsea*, *Kirengeshoma*, *Madhuca*, *Nandina*, *Retama*, *Rorippa*, *Vanilla*, *Yucca*, *Zebrina*, are likewise treated as belonging to the First Declension, unless derived from neuter Greek names ending in *-ma*, e.g. *Ceratostigma*, *Ganoderma*, *Herponema*, *Monostroma*, *Tricholoma* (see p. 82).

Here belong geographical names ending in *-a*, e.g. *Anglia* (England), *Asia*, *China*, *Gallia* (France), *Helvetia* (Switzerland), *Lapponia* (Lapland), *Marilandia* (Maryland, U.S.A.), *Nigeria*, *Nova Zelandia* (New Zealand), and in *-ae* (plural form), e.g. *Aquae Gratianae* (Aix-les-Bains), *Athenae* (Athens). The locative case, indicating where something takes place, is the same as the genitive singular, e.g. *Basileae* (at Basel),

*Holmiae* (at Stockholm), *Romae* (at Rome), or the ablative plural (when the name is of plural form), e.g. *Athenis* (at Athens), and is mainly used on the title-pages of books to record the place of publication.

Feminine personal names, such as *Helena*, *Lucilia*, together with Latinized surnames of women, e.g. *Sheriffia*, *Willmottia*, are mostly used as epithets in the genitive, i.e. *helena*, *luciliae*, *sheriffiae*, *willmottiae*.

The few Latin masculine nouns of the First Declension, e.g. *agricola* (farmer), *incola* (inhabitant), *advena* (newcomer), *poeta* (poet), *scriba* (writer), rarely occur in botanical texts.

To the First Declension also belong a few masculine and feminine nouns of Greek origin. Greek nouns of the First Declension ending in *-η* (eta) when taken into Latin were given the ending *-a* and declined as *anthera* above during the early period of borrowing from Greek (see p. 51). Later the ending *-η* was transcribed as *-e*. Modern coinages vary, e.g. *Dimorphotheca*, *Sarcediotheca*, *Aphanothece*, *Cyanothece*. These nouns are mostly generic names, e.g. *Aloe*, *Alsine*, *Calocybe*, *Coniocybe*, *Psilocybe*, *Silene*, with the genitive singular formed by adding a terminal *-s*, e.g. *Aloes* (of *Aloe*), but include a few terms, e.g. *rhaphe* (raphe). The noun *botanica* (in some early authors *botanice*) is peculiar in that, although the nominative ends in *-a*, it has always been declined as if it were *botanice*, with the genitive singular *botanices*, e.g. *professor botanices* (professor of botany); likewise *America* often has the genitive singular *Americes* instead of *Americae*.

Nom.	<i>Aloe</i>	<i>Anemone</i>	<i>botanica</i> (botanice)
Acc.	<i>Aloen</i>	<i>Anemonen</i>	<i>botanicen</i>
Gen.	<i>Aloes</i>	<i>Anemones</i>	<i>botanices</i>
Dat.	<i>Aloae</i>	<i>Anemonae</i>	<i>botanicae</i>
Abl.	<i>Aloe</i>	<i>Anemone</i>	<i>botanice</i>
Nom.	<i>Clitocybe</i>	<i>Microchaete</i>	<i>Microcoryne</i>
Acc.	<i>Clitocyben</i>	<i>Microchaeten</i>	<i>Microcorynen</i>
Gen.	<i>Clitocybes</i>	<i>Microchaetes</i>	<i>Microcorynes</i>
Dat.	<i>Clitocybae</i>	<i>Microchaetae</i>	<i>Microcorynae</i>
Abl.	<i>Clitocybe</i>	<i>Microchaete</i>	<i>Microcoryne</i>

#### SECOND DECLENSION

Nouns of the Second Declension (indicated by II in the Vocabulary) end in *-us*, *-er* or *-um* in the nominative singular, in *-i* in the genitive singular, *-orum* in the genitive plural. Those ending in *-us* (often rendering the Greek ending *-os*) are mostly masculine, among the

exceptions being feminine *humus* (ground), *fagus* (beech), *pyrus* (pear), *quercus* (oak) and some other names of trees, *methodus* (method) and *hydathodus* (hydathode), neuter *pelagus* (sea) and *virus* (poison); those ending in *-um* or *-on* (transcribed from the Greek ending *-ov*) are neuter.

Nouns ending in *-us* are declined as follows :

#### Singular

Nom.	<i>stylus</i> (m.)	the style (as subject)
Acc.	<i>stylum</i>	the style (as object)
Gen.	<i>styli</i>	of the style
Dat.	<i>stylo</i>	to or for the style
Abl.	<i>stylo</i>	by, with or from the style

#### Plural

Nom.	<i>styli</i>	the styles (as subject)
Acc.	<i>stylos</i>	the styles (as object)
Gen.	<i>stylorum</i>	of the styles
Dat.	<i>stylis</i>	to or for the styles
Abl.	<i>stylis</i>	by, with or from the styles

Similarly declined are the masculine nouns *aculeus*, prickle; *angulus*, angle; *annulus*, annulus; *annus*, year; *apiculus*, small terminal point; *ascus*, ascus; *autumnus*, autumn; *bulbillus*, bulbul; *bulbus*, bulb; *capillus*, hair; *chloroplastus*, chloroplast; *corymbus*, corymb; *culmus*, culm; *discus*, disc; *folliculus*, follicle; *hortulanus*, gardener; *hortus*, garden; *limbus*, limb; *lobus*, lobe; *locus*, place; *nodus*, node; *nervus*, nerve; *nucleus*, nucleus; *numerus*, number; *oculus*, eye; *pappus*, pappus; *pedicellus*, pedicel; *pedunculus*, peduncle; *periplastus*, periplast; *petiolus*, petiole; *pileus*, pileus; *pilus*, hair; *racemus*, raceme; *ramulus*, branchlet; *ramus*, branch; *scapus*, scape; *sorus*, sorus; *strobilus*, cone; *succus*, juice; *sulcus*, furrow; *thallus*, thallus; *thrysus*, thyrsus; *truncus*, trunk; *tubus*, tube; *typus*, type; *utriculus*, utricle; *verticillus*, whorl.

Combinations formed from the above, e.g. *holotypus*, *lectotypus*, are declined in the same way.

Names of genera ending in *-us* are mostly masculine, e.g. *Abelmoschus*, *Acanthus*, *Agaricus*, *Amaranthus*, *Boletus*, *Calochortus*, *Ceanothus*, *Chondrus*, *Cistus*, *Convolvulus*, *Echinocactus*, *Fucus*, *Helianthus*, *Hibiscus*, *Lupinus*, *Paxillus*, *Polyporus*. However, the classical names of trees (and hence of many genera founded on arborescent species) are mostly feminine, e.g. *Alnus*, *Arbutus*, *Buxus*, *Carpinus*, *Cedrus*, *Cissus*, *Cornus*, *Cupressus*, *Crataegus*, *Elaeagnus*, *Fagus*, *Ficus*, *Fraxinus*, *Juniperus*, *Malus*, *Morus*, *Pinus*, *Platanus*, *Prunus*, *Pyrus*, *Ulmus*.

Most masculine personal names are similarly declined, e.g. *Adolphus*, *Albertus*, *Ambrosius*, *Antonius*, *Bartholomaeus*, *Bernardus*, *Carolus*, *Christianus*, *Christophorus*, *Claudius*, *Edmundus*, *Franciscus*, *Georgius*, *Gottlobius*, *Gregorius*, *Gulielmus*, *Henricus*, *Hermannus*, *Hieronymus*, *Jacobus*, *Joachimus*, *Josephus*, *Laurentius*, *Ludovicus*, *Marcus*, *Martinus*, *Nicolaus*, *Paulus*, *Petrus*, *Philippus*, *Ricardus*, *Robertus*, *Timothaeus*. Family names when Latinized or of Latin form ending in *-us* are similarly declined when represented by a man (when represented by a woman, see First Declension, above), e.g. *Caesalpinus* (Cesalpino), *Clusius* (de l'Écluse), *Fuchsius* (Fuchs), *Gesnerus* (Gesner), *Hallerus* (Haller), *Linnaeus*, *Lobelius* (de l'Obel), *Magnus*, *Mappus*, *Medicus*, *Moehringius* (Moehring), *Morisonus* (Morison), *Quercetanus* (Duchesne), *Raius* (Ray), *Renealmus* (Reneaulme), *Rivinus* (Bachmann), *Tragus* (Bock).

Masculine personal names are latinized usually by adding the termination *-ius*, a procedure adopted by the Romans, e.g. when they converted the German 'Hermann' into *Arminius*. The genitive of such names as *Augustus*, *Cornutus*, *Franciscus*, *Linnaeus*, being already of Latin form, takes a single *-i* in the genitive, e.g. *Augusti*, *Cornuti*, *Francisci*, *Linnaei*.

Nom.	Carolus	Linnaeus	Carl Linnaeus (as subject)
Acc.	Carolum	Linnaeum	Carl Linnaeus (as object)
Gen.	Caroli	Linnaei	of Carl Linnaeus
Dat.	Carolo	Linnaeo	to or for Carl Linnaeus
Abl.	Carolo	Linnaeo	by, with or from Carl Linnaeus

The locative of geographical names, e.g. *Rhodus* (Rhodes), *Philippi* (Philippi), ends in *-i*, e.g. *Rhodi* (at Rhodes), or in *-is* (when the name is of plural form), e.g. *Philippis* (at Philippi).

Nouns ending in *-er* are declined as follows:

Singular		
Nom.	ager (m.)	the field (as subject)
Acc.	agrum	the field (as object)
Gen.	agri	of the field
Dat.	agro	to or for the field
Abl.	agro	by, with or from the field

Plural		
Nom.	agri	the fields (as subject)
Acc.	agros	the fields (as object)
Gen.	agrorum	of the fields
Dat.	agris	to or for the fields
Abl.	agris	by, with or from the fields

Similarly declined are *diameter* (f.), diameter; *liber* (m.), book;

*meter* (m.), metre; *vesper* (m.), evening; *vir* (m.), man; a few generic names and epithets, e.g. *Cotoneaster*, *Oleaster*, *Pinaster*, and some masculine personal names, e.g. *Alexander*, *Dryander*, *Sernander*, *Solander*.

Nouns ending in *-um*, all neuter, are declined as follows:

### Singular

Nom.	folium (n.)	the leaf (as subject)
Acc.	folium	the leaf (as object)
Gen.	folii	of the leaf
Dat.	folio	to or for the leaf
Abl.	folio	by, with or from the leaf

### Plural

Nom.	folia	the leaves (as subject)
Acc.	folia	the leaves (as object)
Gen.	foliorum	of the leaf
Dat.	foliis	to or for the leaves
Abl.	foliis	by, with or from the leaves

Similarly declined are the neuter nouns *achenium*, achene; *amyllum*, starch; *androecium*, androecium; *apotheicum*, apothecium; *arboretum*, arboretum; *collum*, neck; *conidium*, conidium; *dorsum*, back; *endospermium*, endosperm; *ericetum*, heath; *excipulum*, exciple; *ferrum*, iron, and other names of metals; *flagellum*, flagellum; *gonidium*, gonidium; *gynoecium*, gynoecium; *herbarium*, herbarium; *involucellum*, involucel; *involucrum*, involucre; *labellum*, labellum; *labium*, lip; *lignum*, wood; *ostium*, entrance, mouth; *ovarium*, ovary; *ovulum*, ovule; *palatum*, palate; *paramylum*, paramylum; *perianthium*, perianth; *perigonium*, perigon; *petalum*, petal; *pistillum*, pistil; *pratum*, meadow; *regnum*, kingdom; *rostrum*, beak; *saxum*, rock; *scutellum*, scutellum; *segmentum*, segment; *sepulum*, sepal; *sporangium*, sporangium; *tepalum*, tepal; *velum*, velum; *vexillum*, vexillum.

Names of genera ending in *-um* are always neuter, e.g. *Allium*, *Codium*, *Crinum*, *Epimedium*, *Hypnum*, *Lilium*, *Mnium*, *Olpidium*, *Stereum*.

Neuter nouns taken from Greek and ending in *-on* (-ov) are declined as follows:

### Singular

Nom.	plancton (n.)	the plankton (as subject)
Acc.	plancton	the plankton (as object)
Gen.	plancti	of the plankton
Dat.	plancto	to or for the plankton
Abl.	plancto	by, with or from the plankton

## Singular

Nom.	Rhododendron	Dinobryon	Trichophyton
Acc.	Rhododendron	Dinobryon	Trichophyton
Gen.	Rhododendri	Dinobryi	Trichophyti
Dat.	Rhododendro	Dinobryo	Trichophyto
Abl.	Rhododendro	Dinobryo	Trichophyto

Here belong such generic names as *Acantholimon*, *Acroptilon*, *Antithamnion*, *Callithamnion*, *Chrysodendron*, *Halarachnion*, *Hydrodictyon*, *Lithothamnion*, *Manniophyton*, *Microdictyon*.

## THIRD DECLENSION

Nouns of the Third Declension (indicated by III in the Vocabulary) have their stem ending in a consonant or in the vowels *-i*, *-o*, *-u* or *-y*, and form the genitive singular by adding the termination *-is* to this, e.g. *tuber*, gen. sing. *tuberis*. Sometimes the nominative singular and the stem are identical, e.g. *animal*, stem *animal-*, gen. sing. *animalis*, but often the nominative singular has been abbreviated, presenting a 'short stem', and the full stem is used for the other cases, e.g. *varietas*, short stem *variet-*, full stem *varietat-*, gen. sing. *varietatis*, abl. plur. *varietatibus*. The number of nouns belonging to the Third Declension is very large. They are commonly classified by grammarians into groups according to the phonetic nature of the stem as given above (pp. 61-63):

- (i) Stems ending in the palatals *c* or *g*. E.g. *radix*, stem *radic-*, gen. sing. *radicis*.
- (ii) Stems ending in the dentals *t* or *d*. E.g. *stipes*, stem *stipit-*, gen. sing. *stipitis*; *phialis*, stem *phialid-*, gen. sing. *phialidis*.
- (iii) Stems ending in the labials *b* or *p*. E.g. *princeps*.
- (iv) Stems ending in the fricative *s* changed usually to *r*. E.g. *flos*, stem *flor-*, gen. sing. *floris*.
- (v) Stems ending in the liquids *l* or *r*. E.g. *color*, stem *color-*, gen. sing. *coloris*.
- (vi) Stems ending in the nasals *n* or *m*. E.g. *margo*, stem *margin-*, gen. sing. *marginis*.

Five other groups (vii-xi) are also distinguished above. These numbers are used in the Vocabulary.

Erik Wikén's *Latin för Botanister och Zoologer* (1951) classifies nouns of the Third Declension into 19 groups according to the ending of the nominative singular, which is, of course, the form given in dictionaries, and botanists may well prefer such a classification. The

following is a modification of Wikén's system with the endings of the nominative singular alphabetically arranged:

Those ending in (1) *-al*; (2) in *-ar*; (3) in *-as*; (4) in *-ax*; (5) in *-e*; (6) in *-en*; (7) in *-er*; (8) in *-es*; (9) in *-ex*; (10) in *-i*; (11) in *-is*; (12) in *-ix*; (13) in *-ma*; (14) in *-o*; (15) in *-on*; (16) in *-or*; (17) in *-os*; (18) in *-s* after a consonant (*-bs*, *-ms*, *-ns*, *-rs*); (19) in *-us*; (20) in *-ut*; (21) in *-ys*; (22) in *-yx*.

The locative of geographical names, e.g. *Carthago* (Carthage), *Olisippo* (Lisbon), *Neapolis* (Naples), *Gades* (Cadiz), may end in *-i* or *-e*, e.g. *Carthagine*, *Carthagini* (at Carthage), *Olisippone* (at Lisbon), *Neapoli* (at Naples), or in *-ibus* (when the name is of plural form), e.g. *Gadibus* (at Cadiz).

1 Ending in *-al*

## Singular

Nom.	animal (n.)	the animal (as subject)
Acc.	animal	the animal (as object)
Gen.	animalis	of the animal
Dat.	animali	to or for the animal
Abl.	animali	by, with or from the animal

## Plural

Nom.	animalia	the animals (as subject)
Acc.	animalia	the animals (as object)
Gen.	animalium	of the animals
Dat.	animalibus	to or for the animals
Abl.	animalibus	by, with or from the animals

2 Ending in *-ar*

## Singular

Nom.	calcar (n.)	the spur (as subject)
Acc.	calcar	the spur (as object)
Gen.	calcaris	of the spur
Dat.	calcari	to or for the spur
Abl.	calcari	by, with or from the spur

## Plural

Nom.	calcaria	the spurs (as subject)
Acc.	calcaria	the spurs (as object)
Gen.	calcarium	of the spurs
Dat.	calcaribus	to or for the spurs
Abl.	calcaribus	by, with or from the spurs

Similarly declined: *nectar* (n.), *nectar*, *par* (n.), pair, and some generic names, e.g. *Mikrosyphar*, *Nuphar*.

## 3 Ending in -as

## Singular

Nom.	<b>varietas</b> (f.)	the variety (as subject)
Acc.	<b>varietatem</b>	the variety (as object)
Gen.	<b>varietatis</b>	of the variety
Dat.	<b>varietati</b>	to or for the variety
Abl.	<b>varietate</b>	by, with or from the variety

## Plural

Nom.	<b>varietates</b>	the varieties (as subject)
Acc.	<b>varietates</b>	the varieties (as object)
Gen.	<b>varietatum</b>	of the varieties
Dat.	<b>varietatibus</b>	to or for the varieties
Abl.	<b>varietatibus</b>	by, with or from the varieties

Similarly declined: *Aceras*; with *d* instead of *t*: *Asclepias* (gen. *Asclepiadis*), *Cycas* (gen. *Cycadis*), *Dryas* (gen. *Dryadis*), *Najas* (gen. *Najadis*), *Serapias* (gen. *Serapiadis*). *Mas* (m.), male, has gen. sing. *maris*.

## 4 Ending in -ax

## Singular

Nom.	<b>styrax</b> (m.)	styrax (as subject)
Acc.	<b>styracem</b>	styrax (as object)
Gen.	<b>styracis</b>	of styrax
Dat.	<b>styraci</b>	to or for styrax
Abl.	<b>styrace</b>	by, with or from styrax

## Plural

Nom.	<b>styraces</b>	styraces (as subject)
Acc.	<b>styraces</b>	styraces (as object)
Gen.	<b>styracum</b>	of styraces
Dat.	<b>styracibus</b>	to or for styraces
Abl.	<b>styracibus</b>	by, with or from styraces

The generic name *Styrax*, preferably masculine (cf. *Taxon* 25:581; 1976) has also been treated as feminine. Similarly declined: *Dipidax* (f.), *Donax* (m.), *Panax* (m.), *Smilax* (f.).

## 5 Ending in -e

## Singular

Nom.	<b>vegetabile</b> (n.)	the plant (as subject)
Acc.	<b>vegetabile</b>	the plant (as object)
Gen.	<b>vegetabilis</b>	of the plant
Dat.	<b>vegetabili</b>	to or for the plant
Abl.	<b>vegetabili</b>	by, with or from the plant

## Plural

Nom.	<b>vegetabilia</b>	the plants (as subject)
Acc.	<b>vegetabilia</b>	the plants (as object)
Gen.	<b>vegetabilium</b>	of the plants
Dat.	<b>vegetabilibus</b>	to or for the plants
Abl.	<b>vegetabilibus</b>	by, with or from the plants

Similarly declined and likewise neuter: *declive*, slope, *mare*, sea, *Secale*, rye.

## 6 Ending in -en

## Singular

Nom.	<b>stamen</b> (n.)	the stamen (as subject)
Acc.	<b>stamen</b>	the stamen (as object)
Gen.	<b>staminis</b>	of the stamen
Dat.	<b>stamini</b>	to or for the stamen
Abl.	<b>stamine</b>	by, with or from the stamen

## Plural

Nom.	<b>stamina</b>	the stamens (as subject)
Acc.	<b>stamina</b>	the stamens (as object)
Gen.	<b>staminum</b>	of the stamens
Dat.	<b>staminibus</b>	to or for the stamens
Abl.	<b>staminibus</b>	by, with or from the stamens

Similarly declined and likewise neuter: *flumen*, river, *gramen*, grass, *legumen*, legume (pod), *nomen*, name, *pollen*, pollen, *semen*, seed, *specimen*, specimen, *Cyclamen*. Note the change of the *e* of the nominative and accusative singular to *i* in other cases. *Lichen* (m.; gen. sing. *lichenis*) and *-solen* (m.; gen. *-solenis*), pipe, keep the *e* throughout.

## 7 Ending in -er

## Singular

Nom.	<b>tuber</b> (n.)	the tuber (as subject)
Acc.	<b>tuber</b>	the tuber (as object)
Gen.	<b>tuberis</b>	of the tuber
Dat.	<b>tuberi</b>	to or for the tuber
Abl.	<b>tubere</b>	by, with or from the tuber

## Plural

Nom.	<b>tubera</b>	the tubers (as subject)
Acc.	<b>tubera</b>	the tubers (as object)
Gen.	<b>tuberum</b>	of the tubers
Dat.	<b>tuberibus</b>	to or for the tubers
Abl.	<b>tuberibus</b>	by, with or from the tubers

A number of neuter generic names are similarly declined, e.g. *Acer*, *Papaver*. The masculine noun *aster* (star) and the generic names derived from it, e.g. *Aster*, *Geaster*, *Wardaster*, have the accusative singular *asterem*, the nominative and accusative plural *asteres*. The suffix *-aster*, as in *pinaster*, indicating inferiority or incomplete resemblance (see p. 73), should not be confused with this. *Gaster* (f.; gen. sing. *gasteris* or *gastri*) may be declined like *tuber* or like *ager* (p. 72). *Character* (m.) and *elater* (m.) are declined like *aster* above.

### 8 Ending in -es

Those with the genitive singular ending in *-etis* or *-edis* are declined as follows:

#### Singular

Nom.	<i>paries</i> (m.)	the wall (as subject)
Acc.	<i>parietem</i>	the wall (as object)
Gen.	<i>parietis</i>	of the wall
Dat.	<i>parieti</i>	to or for the wall
Abl.	<i>pariete</i>	by, with or from the wall

#### Plural

Nom.	<i>parietes</i>	the walls (as subject)
Acc.	<i>parietes</i>	the walls (as object)
Gen.	<i>parietum</i>	of the walls
Dat.	<i>parietibus</i>	to or for the walls
Abl.	<i>parietibus</i>	by, with or from the walls

Similarly declined: *Abies* (f.), *Abies*, *myces* (m.), fungus, and compounds of *-myces*, e.g. *Actinomyces*, *Streptomyces*, *Strobilomyces*.

Those with the genitive singular ending in *-itis* are declined as follows:

#### Singular

Nom.	<i>caespites</i> (m.)	the tuft (as subject)
Acc.	<i>caespitem</i>	the tuft (as object)
Gen.	<i>caespitis</i>	of the tuft
Dat.	<i>caespiti</i>	to or for the tuft
Abl.	<i>caespite</i>	by, with or from the tuft

#### Plural

Nom.	<i>caespites</i>	the tufts (as subject)
Acc.	<i>caespites</i>	the tufts (as object)
Gen.	<i>caespitum</i>	of the tufts
Dat.	<i>caespitibus</i>	to or for the tufts
Abl.	<i>caespitibus</i>	by, with or from the tufts

Similarly declined: *Phragmites*.

Those with the genitive singular ending in *-is* without modification of the stem are declined as follows:

#### Singular

Nom.	<i>pubes</i> (f.)	the hair-covering (as subject)
Acc.	<i>pubem</i>	the hair-covering (as object)
Gen.	<i>pubis</i>	of the hair-covering
Dat.	<i>pubi</i>	to or for the hair-covering
Abl.	<i>pube</i>	by, with or from the hair-covering

#### Plural

Nom.	<i>pubes</i>	the hair-coverings (as subject)
Acc.	<i>pubes</i>	the hair-coverings (as object)
Gen.	<i>pubium</i>	of the hair-coverings
Dat.	<i>pubibus</i>	to or for the hair-coverings
Abl.	<i>pubibus</i>	by, with or from the hair-coverings

Similarly declined are *nubes* (f.), cloud, *rupes* (f.), rock, *sepes* (f.), hedge, *Isoetes* (n.), *Trametes* (f.) and some Greek personal names, e.g. *Orphanides*, gen. sing. *Orphanidis*. Also a number of generic names ending in *-anthes*, *-odes* or *-oides* derived from Greek:

#### Singular

Nom.	<i>Omphalodes</i>	<i>Nymphaoides</i>	<i>Cheilanthes</i>
Acc.	<i>Omphalodem</i>	<i>Nymphaoidem</i>	<i>Cheilanthem</i>
Gen.	<i>Omphalodis</i>	<i>Nymphaoidis</i>	<i>Cheilanthis</i>
Dat.	<i>Omphalodi</i>	<i>Nymphaoidi</i>	<i>Cheilanthi</i>
Abl.	<i>Omphalode</i>	<i>Nymphaoide</i>	<i>Cheilanthe</i>

Similarly declined: *Alyssoides*, *Ammoides*, *Chrysanthemoides*, *Dacryodes*, *Phymatodes*, *Santaloides*, etc. These are all now treated as feminine (cf. *Taxon*, 3: 33-34; 1954).

### 9 Ending in -ex

#### Singular

Nom.	<i>apex</i> (m.)	the tip (as subject)
Acc.	<i>apicem</i>	the tip (as object)
Gen.	<i>apicis</i>	of the tip
Dat.	<i>apici</i>	to or for the tip
Abl.	<i>apice</i>	by, with or from the tip

#### Plural

Nom.	<i>apices</i>	the tips (as subject)
Acc.	<i>apices</i>	the tips (as object)
Gen.	<i>apicum</i>	of the tips
Dat.	<i>apicibus</i>	to or for the tips
Abl.	<i>apicibus</i>	by, with or from the tips

Similarly declined: *caudex* (m.), stem, rootstock, *cortex* (m.), bark, *frutex* (m.), shrub, *suffrutex* (m.), subshrub; also such generic

names as *Atriplex* (f.), *Carex* (f.), *Ilex* (f.), *Ulex* (f.), *Vitex* (f.). *Grex*, meaning 'a flock, swarm, troop', diverges slightly from the above:

*Singular*

Nom.	grex (f.)	the flock (as subject)
Acc.	gregem	the flock (as object)
Gen.	gregis	of the flock
Dat.	gregi	to or for the flock
Abl.	grege	by, with or from the flock

*Plural*

Nom.	greges	the flocks (as subject)
Acc.	greges	the flocks (as object)
Gen.	gregum	of the flocks
Dat.	gregibus	to or for the flocks
Abl.	gregibus	by, with or from the flocks

**10 Ending in -i**

Nouns ending in -i are not of Latin origin but taken from Greek or other languages:

*Singular*

Nom.	Thlaspi (n.)
Acc.	Thlasperm
Gen.	Thlaspis (Thlaspeos)
Dat.	Thlaspi
Abl.	Thlaspe

Names of non-Greek origin such as *Alhagi*, *Dipcadi*, *Kali*, *Muscaria*, are not declined.

**10 bis Ending in -in**

For compounds of -glochin, see p. 90.

**11 Ending in -is**

Those with the genitive singular ending in -is (not -idis), and thus the same as the nominative singular, are declined as follows:

*Singular*

Nom.	caulis (m.)	the stem (as subject)
Acc.	caulem	the stem (as object)
Gen.	caulis	of the stem
Dat.	cauli	to or for the stem
Abl.	caule	by, with or from the stem

*Plural*

Nom.	caules	the stems (as subject)
Acc.	caules	the stems (as object)
Gen.	caulium	of the stems
Dat.	caulibus	to or for the stems
Abl.	caulibus	by, with or from the stems

Similarly declined: *axis* (m.), *axis*, *classis* (f.), *class*, *clavis* (f.), *key*, *rhachis* (f.), *rachis*, *unguis* (m.), *claw*, *vallis* (f.), *valley*; likewise many generic names, e.g. *Calotropis*, *Cannabis*, *Capparis*, *Carpopeltis*, *Digitalis*, *Galeopsis*, *Oxytropis*, *Sinapis*, *Vitis* (all feminine).

Generic names compounded from the Greek *cystis* (f.), *bladder*, are declined as follows:

Nom.	Anacystis (f.)
Acc.	Anacystim
Gen.	Anacystis
Dat.	Anacysti
Abl.	Anacysti

Similarly declined: *Acrocystis*, *Ceratocystis*, *Gloeocystis*, *Macro-cystis*, *Nereocystis*. For declension of *basis* (f.), base, see p. 391.

Those with the genitive singular ending in -idis are declined as follows:

<i>Singular</i>		<i>Plural</i>		
Nom.	cuspis (f.)	the cusp (as subject)	cuspides	the cusps (as subject)
Acc.	cuspidem	the cusp (as object)	cuspides	the cusps (as object)
Gen.	cuspidis	of the cusp	cuspidum	of the cusps
Dat.	cuspidi	to or for the cusp	cuspidibus	to or for the cusps
Abl.	cuspipe	by, with or from the cusp	cuspidibus	by, with or from the cusps

Similarly declined are *epidermis* (f.), *epidermis*, *lapis* (m.), *stone*; likewise most generic names ending in -is, e.g. *Adonis*, *Anthemis*, *Ascodomis*, *Bellis*, *Berberis*, *Botrytis*, *Clematis*, *Crepis*, *Geopyxis*, *Orchis*, *Oxalis*, *Phalaris*, *Pteris*, *Rhopalostylis*. The genitive of *agrostis* (f.), couch-grass, is *agrostis* in classical Latin, but for the generic name *Agrostis* botanists have preferred the genitive *Agrostidis*.

Those with the genitive ending -inis are mostly compounds of -actis (f.), ray, e.g. *Myriactis*, *Stenactis*.

Those with the genitive ending -itis are mostly compounds of -charis, grace, e.g. *Eleocharis*, *Eucharis*, *Hydrocharis*, *Nomocharis*.

**12 Ending in -ix**

Nouns ending in -ix with the genitive singular ending in -icis are declined as follows:

<i>Singular</i>	
Nom.	radix (f.)
Acc.	radicem
Gen.	radicis
Dat.	radici
Abl.	radice

## NOUNS

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## Plural

Nom.	radices	the roots (as subject)
Acc.	radices	the roots (as object)
Gen.	radicum	of the roots
Dat.	radicibus	to or for the roots
Abl.	radicibus	by, with or from the roots

Similarly declined: *appendix* (f.), *appendix*, *cicatrix* (f.), *scar*, *filix* (f.), *fern*, *matrix* (f.), *matrix*, *spadix* (f.), *spadix*; generic names such as *Larix*, *Phoenix*, *Salix*, *Scandix*, *Tamarix*.

A few generic names of Greek origin ending in -ix have the genitive singular ending in -ichis:

Nom.	Calothrix (f.)
Acc.	Calotrichem
Gen.	Calotrichis
Dat.	Calotrichi
Abl.	Calotriche

Similarly declined: *Acrothrix*, *Amphithrix*, *Dichothrix*, *Schizothrix*, *Ulothrix*. The change from *thrix* in the nominative to *trich-* in other cases should be noted.

## 13 Ending in -ma

Nouns ending in -ma, with the genitive singular ending in -atis, are neuter nouns of Greek origin.

## Singular

-Nom.	stigma (n.)	the stigma (as subject)
Acc.	stigma	the stigma (as object)
Gen.	stigmatis	of the stigma
Dat.	stigmati	to or for the stigma
Abl.	stigmate	by, with or from the stigma

## Plural

Nom.	stigmata	the stigmas (as subject)
Acc.	stigmata	the stigmas (as object)
Gen.	stigmatum	of the stigmas
Dat.	stigmatibus	to or for the stigmas
Abl.	stigmatibus	by, with or from the stigmas

Similarly declined: -derma, skin, *lemma*, *lemma*, *parenchyma*, *parenchyma*, -plasma, plasm, -sperma, seed, *rhizoma*, rhizome, *synnema*, *synnema*, *systema*, system, *trichoma*, hair; and numerous generic names, e.g. *Acanthostigma*, *Aethionema*, *Aglaeonema*, *Alisma*, *Anemopaeuma*, *Arthroderma*, *Calostemma*, *Chorizema*, *Dictyonema*, *Histoplasma*, *Metastelma*, *Microloma*, *Monostroma*, *Pachyphragma*, *Phyteuma*, *Saccoloma*, *Streblonema*.

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## THIRD DECLENSION

## 14 Ending in -o

Nouns ending in -o, with the genitive singular in -inis, are declined as follows:

## Singular

Nom.	margo (m.)	the margin (as subject)
Acc.	marginem	the margin (as object)
Gen.	marginis	of the margin
Dat.	margini	to or for the margin
Abl.	margine	by, with or from the margin

## Plural

Nom.	margines	the margins (as subject)
Acc.	margines	the margins (as object)
Gen.	marginum	of the margins
Dat.	marginibus	to or for the margins
Abl.	marginibus	by, with or from the margins

Similarly declined: *altitudo* (f.), altitude, *cotyledo* (f.), cotyledon, *crassitudo* (f.), thickness, *latitudo* (f.), width, *longitudo* (f.), length, *magnitudo* (f.), size, *ordo* (f.), order; and many generic names, e.g. *Albugo*, *Arundo*, *Ferulago*, *Plantago*, *Plumbago*, *Solidago*, *Tussilago*.

Nouns ending in -o, with the genitive singular in -onis, are declined as follows:

## Singular

Nom.	sectio (f.)	the section (as subject)
Acc.	sectionem	the section (as object)
Gen.	sectionis	of the section
Dat.	sectioni	to or for the section
Abl.	sectione	by, with or from the section

## Plural

Nom.	sectiones	the sections (as subject)
Acc.	sectiones	the sections (as object)
Gen.	sectionum	of the sections
Dat.	sectionibus	to or for the sections
Abl.	sectionibus	by, with or from the sections

Similarly declined are *aestivatio* (f.), aestivation, *descriptio* (f.), description, *editio* (f.), edition, *embryo* (m.), embryo, *mucro* (f.), mucro, *stolo* (f.), stolon, *vernatio* (f.), vernation; the generic name *Senecio* (m.) and a few personal names, e.g. *Bello*, gen. sing. *Bellonis*.

## 15 Ending in -on

Nouns of Greek origin ending in -on (-ων), with the genitive singular ending in -onis, are declined as follows:

		Singular
Nom.	icon (f.)	the illustration (as subject)
Acc.	iconem	the illustration (as object)
Gen.	iconis	of the illustration
Dat.	iconi	to or for the illustration
Abl.	icone	by, with or from the illustration

## Plural

		Plural
Nom.	icones	the illustrations (as subject)
Acc.	icones	the illustrations (as object)
Gen.	iconum	of the illustrations
Dat.	iconibus	to or for the illustrations
Abl.	iconibus	by, with or from the illustrations

Similarly declined: *siphon* (m.), tube; and many generic names, e.g. *Achylogeton*, *Cotyledon*, *Endymion*, *Dendromecon*, *Dimorphosiphon*, *Leptochiton*, *Ophiopogon*, *Platycodon*, *Platystemon*, *Potamogeton*, *Rhizopogon*, *Tragopogon*.

A few ending in -on have the genitive singular in -ontis, e.g. *Didymodon*, gen. sing. *Didymodontis*, *Erigeron*, gen. sing. *Erigerontis*, *Leontodon*, gen. sing. *Leontodontis*, *Sarcodon*, gen. sing. *Sarcodontis*.

## 16 Ending in -or

## Singular

Nom.	arbor (f.)	the tree (as subject)
Acc.	arborem	the tree (as object)
Gen.	arboris	of the tree
Dat.	arborei	to or for the tree
Abl.	arbore	by, with or from the tree

## Plural

Nom.	arbores	the trees (as subject)
Acc.	arbores	the trees (as object)
Gen.	arborum	of the trees
Dat.	arboribus	to or for the trees
Abl.	arboribus	by, with or from the trees

Similarly declined are *auctor* (m.), author, *color* (m.), colour, *editor* (m.), editor, *odor* (m.), scent; and a few generic names, e.g. *Mucor*, gen. sing. *Mucoris*, and personal names, e.g. *Hector*, gen. sing. *Hectoris*. Some personal names, e.g. *Taylor*, which could have been treated as Third Declension nouns, are commonly latinized as Second Declension nouns, e.g. *Taylorius*, gen. sing. *Taylorii*, instead of *Taylor*, gen. sing. *Tayloris*.

## 17 Ending in -os

## Singular

Nom.	flos (m.)	the flower (as subject)
Acc.	florem	the flower (as object)
Gen.	floris	of the flower
Dat.	flori	to or for the flower
Abl.	flore	by, with or from the flower

## Plural

Nom.	flores	the flowers (as subject)
Acc.	flores	the flowers (as object)
Gen.	florum	of the flowers
Dat.	floribus	to or for the flowers
Abl.	floribus	by, with or from the flowers

Similarly declined: *ōs* (n.), mouth, gen. sing. *oris*, abl. sing. *ore*, to be distinguished from *ōs* (n.), bone, gen. sing. *ossis*, abl. sing. *osse*.

There are also generic names of Greek origin ending in -ōs (ws) which are commonly declined by analogy with *rhinoceros* (m.), rhinoceros, gen. sing. *rhinocerotis*, abl. sing. *rhinocerote*. Examples are *Anthoceros*, *Dendroceros*, *Macroceros* and *Phaeoceros*; although the pre-Linnaean authors Micheli and Dillenius used the genitive singular *Anthoceri*, post-Linnaean authors, among them Richard Spruce, have preferred the genitive singular *Anthocerotis*, hence the family name *Anthocerotaceae*. *Anacampseros* is similarly declined.

## 18 Ending in -s after a consonant

Nouns ending in -bs are declined as follows :

## Singular

Nom.	urbs (f.)	the city (as subject)
Acc.	urbem	the city (as object)
Gen.	urbis	of the city
Dat.	urbi	to or for the city
Abl.	urbe	by, with or from the city

## Plural

Nom.	urbes	the cities (as subject)
Acc.	urbes	the cities (as object)
Gen.	urbium	of the cities
Dat.	urbibus	to or for the cities
Abl.	urbibus	by, with or from the cities

Nouns ending in -ms are few, e.g. *hiems* (f.), winter, gen. sing. *hiemis*.

Nouns ending in **-ns** are declined as follows :

*Singular*

Nom.	<b>dens</b> (m.)	the tooth (as subject)
Acc.	<b>dentem</b>	the tooth (as object)
Gen.	<b>dentis</b>	of the tooth
Dat.	<b>denti</b>	to or for the tooth
Abl.	<b>dente</b>	by, with or from the tooth

*Plural*

Nom.	<b>dentes</b>	the teeth (as subject)
Acc.	<b>dentes</b>	the teeth (as object)
Gen.	<b>dentium</b>	of the teeth
Dat.	<b>dentibus</b>	to or for the teeth
Abl.	<b>dentibus</b>	by, with or from the teeth

Similarly declined are *lens* (f.), *lens*, *mons* (m.), mountain, *triens* (m.), a third, and a few generic names, e.g. *Fissidens*, *Impatiens*.

Here belong also some nouns with the stem ending in *-d* (not *-t*), e.g. *frons* (f.), frond, gen. sing. *frondis*, *glans* (f.), gland, gen. sing. *glandis*, *Juglans* (f.), walnut, gen. sing. *Juglandis*.

Nouns ending in **-ps** are declined as follows :

*Singular*

Nom.	<b>stirps</b> (f.)	the plant (as subject)
Acc.	<b>stirpem</b>	the plant (as object)
Gen.	<b>stirpis</b>	of the plant
Dat.	<b>stirpi</b>	to or for the plant
Abl.	<b>stirpe</b>	by, with or from the plant

*Plural*

Nom.	<b>stirpes</b>	the plants (as subject)
Acc.	<b>stirpes</b>	the plants (as object)
Gen.	<b>stirpium</b>	of the plants
Dat.	<b>stirpibus</b>	to or for the plants
Abl.	<b>stirpibus</b>	by, with or from the plants

A few have a change in the stem from the nominative to other cases, e.g. *princeps* (m.) and the generic name *Claviceps* (f.).

*Singular*

Nom.	<b>princeps</b>	the chief (as subject)
Acc.	<b>principem</b>	the chief (as object)
Gen.	<b>principis</b>	of the chief
Dat.	<b>principi</b>	to or for the chief
Abl.	<b>principe</b>	by, with or from the chief

*Plural*

Nom.	<b>principes</b>	the chiefs (as subject)
Acc.	<b>principes</b>	the chiefs (as object)
Gen.	<b>principum</b>	of the chiefs
Dat.	<b>principibus</b>	to or for the chiefs
Abl.	<b>principibus</b>	by, with or from the chiefs

*Singular*

Nom.	<b>Claviceps</b>
Acc.	<b>Clavicipitem</b>
Gen.	<b>Clavicipitis</b>
Dat.	<b>Clavicipiti</b>
Abl.	<b>Clavicipite</b>

Nouns ending in **-rs** are declined as follows :

*Singular*

Nom.	<b>pars</b> (f.)	the part (as subject)
Acc.	<b>partem</b>	the part (as object)
Gen.	<b>partis</b>	of the part
Dat.	<b>parti</b>	to or for the part
Abl.	<b>parte</b>	by, with or from the part

*Plural*

Nom.	<b>partes</b>	the parts (as subject)
Acc.	<b>partes</b>	the parts (as object)
Gen.	<b>partium</b>	of the parts
Dat.	<b>partibus</b>	to or for the parts
Abl.	<b>partibus</b>	by, with or from the parts

19 Ending in **-us**

Nouns ending in **-us** include *corpus* (n.), body, gen. sing. *corporis*, *crus* (n.), leg, gen. sing. *cruris*, *genus* (n.), genus, gen. sing. *generis*, *latus* (side), gen. sing. *lateris*, declined like *tuber* (p. 77), and *palus* (f.), marsh, gen. sing. *paludis*, declined like *cuspis* (p. 81). For compounds of *-pus* (m.), foot, see p. 99.

20 Ending in **-ut**

Nouns ending in **-ut** are declined as follows :

*Singular*

Nom.	<b>caput</b> (n.)	the head (as subject)
Acc.	<b>caput</b>	the head (as object)
Gen.	<b>capitis</b>	of the head
Dat.	<b>capiti</b>	to or for the head
Abl.	<b>capite</b>	by, with or from the head

Plural		
Nom.	<b>capita</b>	the heads (as subject)
Acc.	<b>capita</b>	the heads (as object)
Gen.	<b>capitum</b>	of the heads
Dat.	<b>capitibus</b>	to or for the heads
Abl.	<b>capitibus</b>	by, with or from the heads

## 21 Ending in -ys

Nouns ending in -ys are of Greek origin and are all generic names compounded from such words as *-botrys* (m.), cluster of grapes, *-chlamys* (f.), mantle, *-drys* (f.), oak, *-pitys* (f.), pine, *-stachys* (f.), spike. Those which in Greek have the genitive in *-vōs* have the Latin genitive *-ydis*; thus *chlamys*, gen. sing. *chlamydis*, has the derivatives *Chlamydocystis*, *Chlamydomonas*, *Chlamydomyces*, *Chlamydopus* and *Chlamydospora*. Those with the Greek genitive *-vos* should have the Latin genitive *-yos*; but for *Stachys* botanists have preferred *Stachydis* to *Stachyos* (see p. 66). These are declined as follows:

## Singular

Nom.	<b>Leptochlamys</b>
Acc.	<b>Leptochlamydem</b>
Gen.	<b>Leptochlamydis</b>
Dat.	<b>Leptochlamydi</b>
Abl.	<b>Leptochlamyde</b>

## Singular

Nom.	<b>Hypopitys</b> (f.)
Acc.	<b>Hypopitym</b>
Gen.	<b>Hypopitys</b>
Dat.	<b>Hypopityi</b>
Abl.	<b>Hypopitye</b>

## 22 Ending in -yx

Nouns ending in -yx with the genitive singular ending in -ycis are declined as follows:

## Singular

Nom.	<b>calyx</b> (m.)	the calyx (as subject)
Acc.	<b>calycem</b>	the calyx (as object)
Gen.	<b>calycis</b>	of the calyx
Dat.	<b>calyci</b>	to or for the calyx
Abl.	<b>calyce</b>	by, with or from the calyx

## Plural

Nom.	<b>calyces</b>	the calyces (as subject)
Acc.	<b>calyces</b>	the calyces (as object)
Gen.	<b>calycum</b>	of the calyces
Dat.	<b>calycibus</b>	to or for the calyces

Abl.	<b>calycibus</b>	by, with or from the calyces
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Those ending in -yx with the genitive singular ending in -ycis are declined as follows:

## Singular

Nom.	<b>bostryx</b> (m.)	the bostryx (as subject)
Acc.	<b>bostrychem</b>	the bostryx (as object)
Gen.	<b>bostrychis</b>	of the bostryx
Dat.	<b>bostrychi</b>	to or for the bostryx
Abl.	<b>bostryche</b>	by, with or from the bostryx

## Plural

Nom.	<b>bostryches</b>	the bostryces (as subject)
Acc.	<b>bostryches</b>	the bostryces (as object)
Gen.	<b>bostrychum</b>	of the bostryces
Dat.	<b>bostrychibus</b>	to or for the bostryces
Abl.	<b>bostrychibus</b>	by, with or from the bostryces

## FOURTH DECLENSION

Nouns of the Fourth Declension (indicated by IV in the Vocabulary) have their stem ending in *-u*, the nominative singular in *-us* or *-u*, the genitive singular in *-us*; e.g. *cornu* (n.), horn, stem *cornu-*, gen. sing. *cornus*. Nouns ending in *-us* are mostly masculine, although *quercus* (oak), *manus* (hand) and *tribus* (tribe) are feminine. Nouns ending in *-u* are neuter. Their declension is as follows:

## Singular

Nom.	<b>cornu</b> (n.)	the horn (as subject)
Acc.	<b>cornu</b>	the horn (as object)
Gen.	<b>cornus</b>	of the horn
Dat.	<b>cornui</b>	to or for the horn
Abl.	<b>cornu</b>	by, with or from the horn

## Plural

Nom.	<b>cornua</b>	the horns (as subject)
Acc.	<b>cornua</b>	the horns (as object)
Gen.	<b>cornuum</b>	of the horns
Dat.	<b>cornibus</b>	to or for the horns
Abl.	<b>cornibus</b>	by, with or from the horns

## Singular

Nom.	<b>fructus</b> (m.)	the fruit (as subject)
Acc.	<b>fructum</b>	the fruit (as object)
Gen.	<b>fructus</b>	of the fruit
Dat.	<b>fructui</b>	to or for the fruit
Abl.	<b>fructu</b>	by, with or from the fruit

*Plural*

Nom.	<b>fructus</b>	the fruits (as subject)
Acc.	<b>fructus</b>	the fruits (as object)
Gen.	<b>fructuum</b>	of the fruits
Dat.	<b>fructibus</b>	to or for the fruits
Abl.	<b>fructibus</b>	by, with or from the fruits

Declined like *fructus* are *ambitus* (m.), outline, *conspectus* (m.), survey, *gradus* (m.), grade, *habitus* (m.), habit, *lacus* (m.), lake, *lapsus* (m.), mistake, *sensus* (m.), sense, *sexus* (m.), sex, *situs* (m.), position, *status* (m.), standing, *tribus* (f.), tribe, and *usus* (m.), use. The dative and ablative plural of *lacus* and *tribus* are, however, *lacubus* and *tribubus*.

## FIFTH DECLENSION

Nouns of the Fifth Declension (indicated by V in the Vocabulary) have their stem ending in *-e*, the nominative singular in *-s* and the genitive singular in *-i*, e.g. *facies*, stem *facie-*, gen sing. *faciei*. They are all feminine except *dies* (m.), day, and *meridies* (m.), midday.

*Singular*

Nom.	<b>species</b> (f.)	the species (as subject)
Acc.	<b>speciem</b>	the species (as object)
Gen.	<b>speciei</b>	of the species
Dat.	<b>speciei</b>	to or for the species
Abl.	<b>specie</b>	by, with or from the species

*Plural*

Nom.	<b>species</b>	the species (as subject)
Acc.	<b>species</b>	the species (as object)
Gen.	<b>specierum</b>	of the species
Dat.	<b>speciebus</b>	to or for the species
Abl.	<b>speciebus</b>	by, with or from the species

Similarly declined: *crassities*, thickness, *facies*, appearance, *fides*, trust, faith, *planities*, plain, *res*, thing, *series*, series, *spes*, hope, *superficies*, surface.

## CHAPTER VI

## Adjectives and Participles

Adjectives, p. 91—Participles, p. 91—The gerundive, p. 92—Group A, p. 92—Group B, p. 93—Group C, p. 97—Nouns functioning as adjectives, p. 98—Comparison of adjectives, p. 99—Examples of nouns and adjectives declined together, p. 101—Position and concord of adjectives, p. 102—Adjectives as names of taxonomic categories, p. 102.

## ADJECTIVES

Adjectives, as Cobbett wrote in his *Grammar* (1819), consist of 'words which are added or put to Nouns, in order to express something relating to the nouns, which something could not be expressed without the help of Adjectives. . . . I want you to go and catch a *turkey*; but I also want you to catch a *white* turkey, and not only a white turkey, but a *large* turkey. Therefore I add, or put, to the noun, the words *white* and *large*, which, therefore, are called Adjectives.' They are dependent words 'added to the name of a thing to describe the thing more fully'. Botanical Latin has a very rich store of such words. Added to generic names they serve as specific epithets, e.g. *Rosa alba*, *R. canina*, *R. carolina*, *R. centifolia*, *R. cinnamomea*. Added to the names of organs they build up the description of the plant, e.g. *flos solitarius nutans ruber* (flower solitary nodding red). In Latin they must agree as to gender, number and case with the nouns they qualify, e.g. *Asparagus albus* (m.), *Betula alba* (f.), *Chenopodium album* (n.). A masculine noun, for example, in the ablative singular must be accompanied by adjectives in the masculine ablative singular, e.g. *flore solitario nutanti rubro*; if they do not thus agree with the noun they qualify, then they may be interpreted as belonging not to it but to something else. Whereas a noun has normally only one gender, adjectives exist in masculine, feminine and neuter states. They have the same five cases as nouns, but for purposes of declension Latin adjectives fall into two main groups distinguished below and in the Vocabulary as A and B; certain adjectives of Greek origin ending in *-es*, etc., are treated as Group C.

## PARTICIPLES

Participles are parts of verbs with the functions of adjectives and are used and declined in the same way. Active present participles (treated

like Group B adjectives) are exemplified by *attingens* (reaching), *ascendens* (ascending), *emittens* (putting forth), *formans* (forming), *fragrans* (smelling, scented), *nitens* (shining, glossy), *nutans* (nodding, hanging), *repens* (creeping), *superans* (overtopping). Passive past participles (treated like Group A adjectives) are exemplified by *apertus* (opened), *connatus* (united), *contractus* (drawn together), *dispositus* (arranged), *divisus* (divided), *instructus* (provided with), *lectus* (gathered), *reflexus* (turned back), *visus* (seen).

### THE GERUNDIVE

The GERUNDIVE is a kind of participle, passive in meaning, implying fitness or potentiality for an act or directing what is to be done, and is used occasionally as a specific epithet, e.g. in *Rhododendron amandum*, or in such phrases as *nomen genericum conservandum* (generic name to be kept), *species excludendae* (species to be excluded), more often to end a diagnosis, e.g. *species floribus majoribus distinguenda* (species by its larger flowers to be distinguished).

### GROUP A

Adjectives and participles of this group have the nominative singular endings *-us* (masculine), *-a* (feminine), *-um* (neuter) or *-er* (masculine), *-ra* (feminine), *-rum* (neuter), e.g. *altus*, *-a*, *-um* (tall), *ruber*, *rubra*, *rubrum* (red). Their case-endings are those of nouns of Declensions I and II.

Singular			
	M.	F.	N.
Nom.	<i>longus</i>	<i>longa</i>	<i>longum</i>
Acc.	<i>longum</i>	<i>longam</i>	<i>longum</i>
Gen.	<i>longi</i>	<i>longae</i>	<i>longi</i>
Dat.	<i>longo</i>	<i>longae</i>	<i>longo</i>
Abl.	<i>longo</i>	<i>longa</i>	<i>longo</i>

Plural			
	M.	F.	N.
Nom.	<i>longi</i>	<i>longae</i>	<i>longa</i>
Acc.	<i>longos</i>	<i>longas</i>	<i>longa</i>
Gen.	<i>longorum</i>	<i>longarum</i>	<i>longorum</i>
Dat.	<i>longis</i>	<i>longis</i>	<i>longis</i>
Abl.	<i>longis</i>	<i>longis</i>	<i>longis</i>

Among the many adjectives and participles declined as above are *acutus* (acute), *albus* (white), *altus* (tall), *crassus* (thick), *cuneatus* (wedge-shaped), *curvatus* (curved), *ellipticus* (elliptic), *elongatus* (elongated), *-fidus* (-split), *hirsutus* (hairy), *lanceolatus* (lanceolate), *latus*

(broad), *magnus* (big), *nullus* (lacking), *obtusus* (blunt), *ovatus* (ovate), *ovoideus* (ovoid), *parvus* (small), *rotundatus* (rounded), *sparsus* (sparse), *vestitus* (clothed), and geographical adjectives such as *americanus* (American), *anglicus* (English), *hibernicus* (Irish), *lutetianus* (of Paris), *monspeliacus* (of Montpellier).

The gerundives *addendus* (to be added), *conservandus* (to be retained), *distinguendus* (to be distinguished), *excludendus* (to be excluded) are similarly declined.

### Singular

Nom.	M.	F.	N.
Acc.	<i>floriferum</i>	<i>florifera</i>	<i>floriferum</i>
Gen.	<i>floriferi</i>	<i>floriferae</i>	<i>floriferi</i>
Dat.	<i>florifero</i>	<i>floriferae</i>	<i>florifero</i>
Abl.	<i>florifero</i>	<i>florifera</i>	<i>florifero</i>

### Plural

Nom.	M.	F.	N.
Acc.	<i>floriferos</i>	<i>floriferae</i>	<i>florifera</i>
Gen.	<i>floriferorum</i>	<i>floriferarum</i>	<i>floriferorum</i>
Dat.	<i>floriferis</i>	<i>floriferis</i>	<i>floriferis</i>
Abl.	<i>floriferis</i>	<i>floriferis</i>	<i>floriferis</i>

Like *florifer* (flower-bearing) are declined other compounds of *-fer* and *-ger* as *bulbiger* (bulb-bearing), *fructiger* (fruit-bearing), and adjectives such as *asper* (rough), *lacer* (torn), *liber* (free), *tener* (thin).

### Singular

Nom.	M.	F.	N.
Acc.	<i>glabrum</i>	<i>glabra</i>	<i>glabrum</i>
Gen.	<i>glabri</i>	<i>glabrae</i>	<i>glabri</i>
Dat.	<i>glabro</i>	<i>glabrae</i>	<i>glabro</i>
Abl.	<i>glabro</i>	<i>glabra</i>	<i>glabro</i>

### Plural

Nom.	M.	F.	N.
Acc.	<i>glabros</i>	<i>glabras</i>	<i>glabra</i>
Gen.	<i>glabrorum</i>	<i>glabrarum</i>	<i>glabrorum</i>
Dat.	<i>glabris</i>	<i>glabris</i>	<i>glabris</i>
Abl.	<i>glabris</i>	<i>glabris</i>	<i>glabris</i>

Like *glaber* (glabrous) are declined *ater* (black), *integer* (entire), *niger* (black), *pulcher* (beautiful), *ruber* (red), *scaber* (rough).

### GROUP B

Adjectives and participles of this group have the nominative singular endings *-is* (masculine and feminine), *-e* (neuter) or *-er* (masculine), *-ris*

(feminine), *-re* (neuter), or *-x*, *-ens*, *-ans* (the same for all genders). Their case-endings are those of Declension III, except that the ablative singular is formed in *-i*, to avoid confusion with neuter nominative and accusative, whereas ablative singular in *-e* is markedly more common in Third Declension nouns; the genitive plural ends in *-ium*.

1 Adjectives with masculine and feminine nominative singular ending in *-is*, the neuter in *-e*:

*Singular*

	M. & F.	N.	
Nom.	brevis	breve	the short . . . (as subject)
Acc.	brevem	breve	the short . . . (as object)
Gen.	brevis	brevis	of the short . . .
Dat.	brevi	brevi	to or for the short . . .
Abl.	brevi	brevi	by, with or from the short . . .

*Plural*

	M. & F.	N.	
Nom.	breves	brevia	the short . . . (as subject)
Acc.	breves	brevia	the short . . . (as object)
Gen.	brevium	brevium	of the short . . .
Dat.	brevibus	brevibus	to or for the short . . .
Abl.	brevibus	brevibus	by, with or from the short . . .

*Singular*

	M. & F.	N.	
Nom.	lateralis	laterale	
Acc.	lateralem	laterale	
Gen.	lateralis	lateralis	
Dat.	laterali	laterali	
Abl.	laterali	laterali	

*Plural*

	M. & F.	N.	
Nom.	laterales	lateralia	
Acc.	laterales	lateralia	
Gen.	lateralium	lateralium	
Dat.	lateralibus	lateralibus	
Abl.	lateralibus	lateralibus	

Like *brevis* (short) and *lateralis* (lateral) are declined *acaulis* (stemless), *affinis* (related), *communis* (common), *edulis* (edible), *fertilis* (fertile), *-formis* (-shaped, as in *cupuliformis*, *ensiformis*, *filiformis*, *fusiformis*, etc.), *-glumis* (-glumed), *gracilis* (slender), *humilis* (low), *laevis* (smooth), *linearis* (linear), *mollis* (soft), *-nervis* (-nerved, as in *paucinervis*, *multinervis*), *-nодis* (-noded), *omnis* (all), *orbicularis* (orbicular), *originalis* (original), *perennis* (perennial), *sessilis* (sessile), *similis* (like), *tenuis* (thin), *terminalis* (terminal), *viridis* (green), *volubilis* (twining), and other adjectives with the masculine and feminine nominative singular ending in *-is*, *-alis*, *-aris*, *-ibilis*, *-ensis*, *-ilis*, among them

being compounds of *-caulis* (-stemmed), *-cornis* (-horned) and *-rostris* (-beaked) and most geographical epithets, as *berolinensis* (of Berlin), *cantabrigiensis* (of Cambridge), *lugdunensis* (of Lyons), *monspeliensis* (of Montpellier), *nepalensis* (of Nepal), *oxoniensis* (of Oxford), *parisiensis* (of Paris), *sinensis* (of China), *vindobonensis* (of Vienna).

Here belong in botanical Latin the adjectives *acris* (bitter), *campestris* (relating to plains), *palustris* (marshy), *sylvestris* (woodland, wild) and *terrestris* (earthy), with the nominative masculine singular ending in *-is*, following the usage of Linnaeus, exemplified by *Lathyrus palustris*, *Lathyrus sylvestris*, *Ranunculus acris*, *Scirpus palustris*, *Sonchus palustris*, although in classical Latin these possessed a nominative masculine singular in *-er*, i.e. *acer*, *campester*, *paluster*, *silvester*, *terrester*.

2 Adjectives and participles with the nominative singular the same in all genders:

*Singular*

	M. & F.	N.	
Nom.	simplex	simplex	the simple . . . (as subject)
Acc.	simplicem	simplex	the simple . . . (as object)
Gen.	simplicis	simplicis	of the simple . . .
Dat.	simplici	simplici	to or for the simple . . .
Abl.	simplici	simplici	by, with or from the simple . . .

*Plural*

	M. & F.	N.	
Nom.	simplices	simplicia	the simple . . . (as subject)
Acc.	simplices	simplicia	the simple . . . (as object)
Gen.	simplicium	simplicium	of the simple . . .
Dat.	simplicibus	simplicibus	to or for the simple . . .
Abl.	simplicibus	simplicibus	by, with or from the simple . . .

Like *simplex* (simple, undivided) are declined *duplex* (twofold), *fallax* (false), *praecox* (early), *tenax* (tough), *triplex* (threefold).

*Singular*

	M. & F.	N.	
Nom.	repens	repens	
Acc.	repentem	repens	
Gen.	repentis	repentis	
Dat.	repenti	repenti	
Abl.	repenti (-e)	repenti (-e)	

*Plural*

	M. & F.	N.	
Nom.	repentes	repentia	
Acc.	repentes	repentia	
Gen.	repentium	repentium	
Dat.	repentibus	repentibus	
Abl.	repentibus	repentibus	

Like *repens* (creeping) are declined other present participles such as *abiens* (departing), *percurrents* (running through), *spectans* (facing, situated towards) (see above, p. 92), adjectives such as *elegans* (elegant), *pubescens* (pubescent) and *recens* (recent), and compounds of *-dens* (toothed), e.g. *brevidens* (short-toothed).

*Singular*

	M. & F.	N.
Nom.	bicolor	bicolor
Acc.	bicolorem	bicolor
Gen.	bicoloris	bicoloris
Dat.	bicolori	bicolori
Abl.	bicolori	bicolori

*Plural*

Nom.	bicolores	bicoloria
Acc.	bicolores	bicoloria
Gen.	bicolorium	bicolorium
Dat.	bicoloribus	bicoloribus
Abl.	bicoloribus	bicoloribus

Like *bicolor* (two-coloured) are declined *multicolor* (many-coloured), *tricolor* (three-coloured), etc.

To Group B also belong various adjectives with unusual nominative endings as *brevipes* (short-footed; gen. sing. *brevipedis*, abl. sing. *brevipedi*) and other compounds of *-pes*, *longicuspis* (long-cusped; gen. sing. *longicuspidis*, abl. sing. *longicuspidi*) and other compounds of *-cuspis*, *par* (equal, paired; gen. sing. *paris*, abl. sing. *pari*), *impar* (unequal), *teres* (terete; gen. sing. *teretis*, abl. sing. *tereti*), *multiceps* (many-headed; gen. sing. *multicipitis*, abl. sing. *multicipiti*) and other compounds of *-ceps*. Most of such adjectives are really nouns given an adjectival function.

*Vetus* (old) differs from most other adjectives of Group B in having the ablative singular preferably ending in *-e* not *-i*.

*Singular*

	M. & F.	N.
Nom.	vetus	vetus
Acc.	veterem	vetus
Gen.	veteris	veteris
Dat.	veteri	veteri
Abl.	vetere	vetere

*Plural*

Nom.	veteres	vetera
Acc.	veteres	vetera
Gen.	veterum	veterum
Dat.	veteribus	veteribus
Abl.	veteribus	veteribus

Adjectives of Greek origin, whether directly transliterated from Greek (see Chapter XIX, pp. 260-263) or newly compounded of Greek elements, are mostly used as specific epithets in large genera. When given a Latinized ending in *-us*, as in *arachnoideus* (spidery), *callibotryus* (with beautiful clusters), *leptochilus* (slender-lipped), *macranthus* (large-flowered), *micromerus* (with small parts), *platyphyllos* (broad-leaved), *polychromus* (many-coloured), *rhodorrhizus* (red-rooted), etc., they are treated as ordinary Group A adjectives. Those with Greek endings in *-es*, *-ys*, etc., raise difficulties of declension.

Adjectives ending in *-oides* (resembling) are declined as follows :

*Singular*

Nom.	M. & F.	N.	
	bryoides	bryoides	the moss-like . . . (as subject)
Acc.	bryoidem	bryoides	the moss-like . . . (as object)
Gen.	bryoidis	bryoidis	of the moss-like . . .
Dat.	bryoidi	bryoidi	to or for the moss-like . . .
Abl.	bryoide	bryoide	by, with or from the moss-like . . .

*Plural*

Nom.	M. & F.	N.	
	bryoides	bryoida	the moss-like . . . (as subject)
Acc.	bryoides	bryoida	the moss-like . . . (as object)
Gen.	bryodium	bryodium	of the moss-like . . .
Dat.	bryoidibus	bryoidibus	to or for the moss-like . . .
Abl.	bryoidibus	bryoidibus	by, with or from the moss-like . . .

Adjectives ending in *-odes* are similarly declined :

*Singular*

Nom.	M. & F.	N.
	epiphloeodes	epiphloeodes
Acc.	epiphloeodem	epiphloeodes
Gen.	epiphloeodis	epiphloeodis
Dat.	epiphloeodi	epiphloeodi
Abl.	epiphloeode	epiphloeode

*Plural*

Nom.	M. & F.	N.
	epiphloeodes	epiphloeoda
Acc.	epiphloeodes	epiphloeoda
Gen.	epiphloeodium	epiphloeodium
Dat.	epiphloeodibus	epiphloeodibus
Abl.	epiphloeodibus	epiphloeodibus

Like *epiphloeodes* (epiphloodal, i.e. growing on the bark) are declined *endophloeodes* (endophloodal, i.e. growing within the bark), *euodes* (well-scented), *haematoedes* (blood-like) and *physodes* (bladder-like).

Such epithets as *alooides*, *alismoides*, *hyacinthoides*, *orchidooides*, *phlomoides*, etc., indicating resemblance to the genera *Aloe*, *Alisma*, *Hyacinthus*, *Orchis*, *Phlomis*, etc., *allantoides* (sausage-like), *deltooides* (triangular), are similarly declined.

## NOUNS FUNCTIONING AS ADJECTIVES

An epithet which is really a noun in apposition given an adjectival function should usually be declined like that noun from which it is derived without reference to the gender of the associated generic name.

Singular		
Nom.	<b>-botrys</b>	<b>-glochin</b>
Acc.	<b>-botryn</b>	<b>-glochinem</b>
Gen.	<b>-botryis</b>	<b>-glochinis</b>
Dat.	<b>-botryi</b>	<b>-glochini</b>
Abl.	<b>-botrye</b>	<b>-glochine</b>

Plural		
Nom.	<b>-botryes</b>	<b>-glochines</b>
Acc.	<b>-botryes</b>	<b>-glochines</b>
Gen.	<b>-botryum</b>	<b>-glochinum</b>
Dat.	<b>-botryibus</b>	<b>-glochinibus</b>
Abl.	<b>-botryibus</b>	<b>-glochinibus</b>

Singular		
Nom.	<b>-ops</b>	<b>-pogon</b>
Acc.	<b>-opem</b>	<b>-pogonem</b>
Gen.	<b>-opis</b>	<b>-pogonis</b>
Dat.	<b>-opi</b>	<b>-pogoni</b>
Abl.	<b>-ope</b>	<b>-pogone</b>

Plural		
Nom.	<b>-opes</b>	<b>-pogones</b>
Acc.	<b>-opes</b>	<b>-pogones</b>
Gen.	<b>-opum</b>	<b>-pogonum</b>
Dat.	<b>-opibus</b>	<b>-pogonibus</b>
Abl.	<b>-opibus</b>	<b>-pogonibus</b>

Singular		
Nom.	<b>-stemon</b>	<b>-stylis</b>
Acc.	<b>-stemonem</b>	<b>-stylidem</b>
Gen.	<b>-stemonis</b>	<b>-stylidis</b>
Dat.	<b>-stemoni</b>	<b>-stylidi</b>
Abl.	<b>-stemone</b>	<b>-stylide</b>

## Plural

Nom.	<b>-stemones</b>	<b>-stylides</b>	<b>-triches</b>
Acc.	<b>-stemones</b>	<b>-stylides</b>	<b>-triches</b>
Gen.	<b>-stemonum</b>	<b>-stylidum</b>	<b>-trichum</b>
Dat.	<b>-stemonibus</b>	<b>-stylidibus</b>	<b>-trichibus</b>
Abl.	<b>-stemonibus</b>	<b>-stylidibus</b>	<b>-trichibus</b>

Some examples of the above are *brachybotrys* (with short raceme), *microglochin* (with small point), *oligodon* (with few teeth), *chrysopogon* (with golden beard), *melanops* (with black eye), *macrostachys* (with large spike), *corynestemon* (with club-shaped stamen), *rhopalostylis* (with club-shaped style), *pyrrhothrix* (with fiery hair).

Compounds of *-pus* (-footed, -based), acc. sing. *-podem*, gen. sing. *-podis*, such as *apus* (footless, sessile), *micropus* (small-footed, with small base or stalk), are similarly declined; there are corresponding compounds of *-podus* (-footed), such as *apodus*, *micropodus*, all derived from Greek.

## COMPARISON OF ADJECTIVES

The ordinary state of an adjective, e.g. 'long' (*longus*), is grammatically known as its *positive* degree; its state denoting an increase of the quality concerned, e.g. 'longer', 'rather long' (*longior*), is known as its *comparative* degree, and its state denoting the utmost attainable or an extreme form, e.g. 'longest', 'very long' (*longissimus*), as its *superlative* degree. In Latin the comparative is formed by adding *-ior* (for masculine and feminine) and *-ius* (for neuter) to the stem of the positive, thus *longior*, *longius* (longer) from *longus* (long). The superlative is formed by adding *-issimus* (masculine), *-issima* (feminine) and *-issimum* (neuter) to the stem, thus *longissimus* (most long), except for adjectives ending in *-er* which add *-rimus*, e.g. *tenerimus* (most thin) from *tener* (thin), and a few ending in *-ilis*, which double the *l* and add *-imus*, e.g. *gracillimus* (most slender) from *gracilis* (slender).

The Comparative is declined as follows :

## Singular

	M. & F.	N.	
Nom.	<b>longior</b>	<b>longius</b>	the longer . . . (as subject)
Acc.	<b>longiorem</b>	<b>longius</b>	the longer . . . (as object)
Gen.	<b>longioris</b>	<b>longioris</b>	of the longer . . .
Dat.	<b>longiori</b>	<b>longiori</b>	to or for the longer . . .
Abl.	<b>longiore</b>	<b>longiore</b>	by, with or from the longer . . .

## Plural

Nom.	<b>longiores</b>	<b>longiora</b>	the longer . . . (as subject)
Acc.	<b>longiores</b>	<b>longiora</b>	the longer . . . (as object)

Gen.	longiorum	longiorum	of the longer . . .
Dat.	longioribus	longioribus	to or for the longer . . .
Abl.	longioribus	longioribus	by, with or from the longer . . .

Thus 'leaves longer than the spines' would be translated by *folia spinis longiora*, 'leaves shorter than the spines' by *folia spinis breviora* (see Chapter VIII, pp. 115-118).

The Superlative is declined as follows :

*Singular*

	M.	F.	N.	
Nom.	longissimus	longissima	longissimum	the longest . . . (as subject)
Acc.	longissimum	longissimam	longissimum	the longest . . . (as object)
Gen.	longissimi	longissimae	longissimi	of the longest . . .
Dat.	longissimo	longissimae	longissimo	to or for the longest . . .
Abl.	longissimo	longissima	longissimo	by, with or from the longest . . .

*Plural*

	M.	F.	N.	
Nom.	longissimi	longissimae	longissima	the longest . . . (as subject)
Acc.	longissimos	longissimas	longissima	the longest . . . (as object)
Gen.	longissimorum	longissimorum	longissimorum	of the longest . . .
Dat.	longissimis	longissimis	longissimis	to or for the longest . . .
Abl.	longissimis	longissimis	longissimis	by, with or from the longest . . .

Unfortunately there are a few adjectives with comparatives and superlatives not formed as above, e.g. *bonus*, *-a*, *-um*, good, *melior* (m. & f.), *melius* (n.), better, *optimus*, *-a*, *-um*, best; *externus*, *-a*, *-um*, outside, *exterior* (m. & f.), *exterius* (n.), outer, *extremus*, *-a*, *-um*, outermost; *inferus*, *-a*, *-um*, lower, *inferior* (m. & f.), *inferius* (n.), lower, *infimus*, *-a*, *-um* or *imus*, *-a*, *-um*, lowest; *internus*, *-a*, *-um*, inside, *interior* (m. & f.), *interius* (n.), inner, *intimus*, *-a*, *-um*, innermost; *magnus*, *-a*, *-um*, great, *major* (m. & f.), *majus* (n.), greater, *maximus*, *-a*, *-um*, greatest; *multi*, *-ae*, *-a* (plural), many, *plures* (m. & f.), *plura* (n.), more, *plurimi*, *-ae*, *-a*, most.

Comparison of adjectives ending in *-eus*, *-ius* and *-uus* is usually made by adding the adverbs *magis* (more), *maxime* (most) to the positive, e.g. *dubius* (doubtful), *magis dubius* (more doubtful), *maxime dubius* (most doubtful).

EXAMPLES OF NOUNS AND ADJECTIVES  
DECLINED TOGETHER

1 Masculine noun : *ramulus* (branchlet)

*Singular*

Nom.	ramulus (branchlet)	glaber	rigidus	gracilis	simplex
Acc.	ramulum	glabrum	rigidum	gracilem	(unbranched)
Gen.	ramuli	glabri	rigidi	gracilis	<i>simplicem</i>
Dat.	ramulo	glabro	rigido	gracili	<i>simplicis</i>
Abl.	ramulo	glabro	rigido	gracili	<i>simplici</i>

*Plural*

Nom.	ramuli	glabri	rigidi	graciles	simplices
Acc.	ramulos	glabros	rigidos	graciles	<i>simplicem</i>
Gen.	ramulorum	glabrorum	rigidorum	gracilium	<i>simplicis</i>
Dat.	ramulis	glabris	rigidis	gracilibus	<i>simplicibus</i>
Abl.	ramulis	glabris	rigidis	gracilibus	<i>simplicibus</i>

2 Feminine noun : *corolla* (corolla)

*Singular*

Nom.	corolla (corolla)	glabra	alba	patens	tenuis
Acc.	corollam	glabram	albam	patentem	(thin)
Gen.	corollae	glabre	albae	patentis	<i>tenuem</i>
Dat.	corollae	glabre	albae	patenti	<i>tenuis</i>
Abl.	corolla	glabra	alba	patenti	<i>tenui</i>

*Plural*

Nom.	corollae	glabre	albae	patentes	tenues
Acc.	corollas	glabras	albas	patentes	<i>tenues</i>
Gen.	corollarum	glabrarum	albarum	patentium	<i>tenuum</i>
Dat.	corollis	glabris	albis	patentibus	<i>tenubus</i>
Abl.	corollis	glabris	albis	patentibus	<i>tenubus</i>

3 Neuter noun : *folium* (leaf)

*Singular*

Nom.	folium (leaf)	glabrum	ovatum	ascendens	(sessile)
Acc.	folium	glabrum	ovatum	ascendens	sessile
Gen.	folii	glabri	ovati	ascendentis	<i>sessilis</i>
Dat.	folio	glabro	ovato	ascendentis	<i>sessili</i>
Abl.	folio	glabro	ovato	ascendentis	<i>sessili</i>

*Plural*

Nom.	folia	glabra	ovata	ascendentia	sessilia
Acc.	folia	glabra	ovata	ascendentia	<i>sessilia</i>
Gen.	foliorum	glabrum	ovatorum	ascendentium	<i>sessilium</i>
Dat.	foliis	glabris	ovatis	ascendentibus	<i>sessilibus</i>
Abl.	foliis	glabris	ovatis	ascendentibus	<i>sessilibus</i>

## POSITION AND CONCORD OF ADJECTIVES

In formal descriptions (see Chapter XIV) an adjective always comes after the noun it qualifies; in observations and annotations, following classical precedent, it may for emphasis sometimes be placed before the noun.

When two or more nouns of the same gender are qualified by the same adjective, this has the same gender as and takes its number from the noun nearest to it, e.g. *caulis et petiolus glaber* (stem and petiole glabrous), *spatha et corollae glabrae* (spathe and corollas glabrous), *androecium et gynoecium glabrum* (androecium and gynoecium glabrous), or the plural (same gender or neuter) can be used, e.g. *species et forma novae*.

When two nouns are linked by *cum* (with), they are regarded as forming a single unit, and, if the main noun is singular, then the adjective qualifying them will be likewise singular and agree in gender with the main noun, e.g. *lamina cum petiolo 10 cm. longa* (blade together with the petiole 10 cm. long).

When nouns of different gender are qualified by the same adjective, this takes the number and gender of the noun nearest to it, e.g. *calyx et corolla glabra* (calyx and corolla glabrous), *corolla et androecium glabrum* (corolla and androecium glabrous), *androecium et stylus glaber* (androecium and style glabrous), or its neuter plural can be used, e.g. *androecium et stylus glabra*. For emphasis or to avoid ambiguity, the adjective can be repeated after each noun; it then agrees in number and gender with the noun it qualifies, e.g. *caulis glaber, folium glabrum* (stem glabrous, leaf glabrous), *caulis glaber, folia glabra* (stem glabrous, leaves glabrous).

## ADJECTIVES AS NAMES OF TAXONOMIC CATEGORIES

The ancients used a number of adjectives as nouns, the qualified word presumably being dropped as redundant. The names of many taxonomic groups in modern systematic botany are similarly of adjectival origin or have been coined by the aid of feminine plural adjectival endings to agree with *planta*. Under the *International Code of botanical Nomenclature*, particular adjectival plural endings are used to indicate the rank of the group concerned, a method introduced by Lindley in his *Natural System of Botany*, 2nd ed. (1836), where he made all the names of divisions of the same value end in the same way. As he stated, 'the orders [i.e. families] are here distinguished by ending in *aceae*, the suborders [i.e. subfamilies and tribes] in *eae*, the alliances [i.e. orders] in *ales* and the groups [i.e. classes] in *osae*'.

The name of an order (*ordo*) based on the stem of the name of a

family has the ending *-ales*, e.g. *Agaricales* from *Agaricaceae*. This is the feminine (and also the masculine) nominative plural ending of group A adjectives such as *muralis* with the suffix *-alis* meaning 'connected with, pertaining to'.

The name of a suborder (*subordo*) based on the name of a family has the ending *-ineae*, e.g. *Solanineae* from *Solanum*. This is the feminine nominative plural ending of group A adjectives such as *cartilagineus* with the suffix *-ineus* indicating resemblance or possession.

The name of a family (*familia*), excluding a few very old names such as *Labiatae*, *Umbelliferae*, *Gramineae*, is formed by adding the ending *-aceae* to the stem of a legitimate name of an included genus, e.g. *Cyatheaceae* from *Cyathea*. This is the feminine nominative plural ending of group A adjectives such as *membranaceus* with the suffix *-aceus* meaning 'made of, resembling'.

The name of a subfamily (*subfamilia*) is similarly formed by adding *-oideae* to the stem of the legitimate name of an included genus, e.g. *Boraginoideae* from *Borago*. This is the feminine nominative plural ending of group A adjectives such as *arachnoideus* with the suffix *-oideus* indicating resemblance. A tribe (*tribus*) is designated likewise but with the ending *-eae* (which is the feminine nominative plural ending of the suffix *-eus*), e.g. *Cyatheeeae* from *Cyathea*, and a subtribe (*subtribus*) with the ending *-inae* (from *-inus*).

A generic name formed by treating an adjective as a noun takes its gender from the ending adopted, which is usually feminine, e.g. *Gloriosa* (nominative feminine singular of *gloriosus*).

The name of a subsection or series, i.e. of a group of closely allied species forming a subdivision of a genus below the rank of section, is preferably a plural adjective agreeing in gender with the generic name, e.g. *Cotoneaster* series *Distichi*, series *Microphylli*, etc., *Pedicularis* series *Siphonanthae*, series *Graciles*, series *Myriophyliae*, etc., *Rhododendron* subsect. *Campylogyna*, subsect. *Lepidota*, subsect. *Baileya*, etc. The first authors to employ formally the term *series* were Alexander von Bunge in his revision of *Acantholimon* (1872), wherein he distinguished the series *Microcalycina*, series *Rhodocalycina*, etc., and Carl von Maximowicz in his synopsis of *Lespedeza* (1873), the subgenus *Lespedeza* sect. *Eu-Lespedeza* being here divided into series *Violaceae*, series *Junceae*, etc., and in his publications on *Ribes* (1873), *Cnicus* (1874), *Chrysosplenium* (1876), *Pedicularis* (1877), *Spiraea* (1879), *Viburnum* (1880), etc. (cf. E. G. Bobrov in *Bot. Zhurn.* 44: 1553–1556; 1959). From these Russian publications the term *series* passed into British and German use. Following Maximowicz's example, the name (epithet) of a series is usually the nominative plural of the specific epithet of the best-known or most typical member of the series.

## CHAPTER VII

## Adverbs

An adverb is a word added to a verb, an adjective or another adverb, but not to a noun or pronoun, to give it greater precision, usually by limiting its meaning. Thus the verb *moveo* refers to any kind of movement; the addition of the adverb *celeriter* (swiftly) would restrict it to rapid movement; the addition of the adverb *tarde* (slowly) would restrict it to slow movement. Just as adverbs are formed from adjectives in English, usually by adding the termination '-ly', as 'rapidly' from 'rapid', in Latin they are formed from adjectives by adding to the stem *-e* (in adjectives of First and Second Declension) or *-ter* or *-iter* (in adjectives of the Third Declension), as *dense* (densely) from *densus* (dense), *frequenter* (frequently) from *frequens* (frequent), *irregulariter* (irregularly) from *irregularis* (irregular). The ablative of some adjectives, pronouns and nouns is also used as an adverb, thus producing adverbs ending in *-o*, as *falso* (falsely), *primo* (firstly), *vulgo* (commonly). The accusative singular neuter of many adjectives and pronouns likewise can serve as an adverb, e.g. *ceterum* (for the rest), *multum* (much), *paulum* (little), *primum* (first). Many adverbs, however, end in *-tim*, e.g. *gradatim* (step by step, gradually) derived through *gradatus* (furnished with steps) from *gradus* (a step), or *-im*, e.g. *sensim* (sensibly, gradually) from *sentio* (be sensible of, perceive). A few adverbs referring to origin end in *-tus*, e.g. *penitus* (deep within, from the innermost part), *intus* (inside, from within). Occasionally two adverbs identical except for the ending have a slight difference in meaning, e.g. *certe* (at least) and *certo* (certainly), *rare* (thinly) and *raro* (seldom), *crebre* (closely, repeatedly) and *crebro* (repeatedly). Adverbs thus display much diversity of ending.

The comparative of an adverb is taken from the accusative singular neuter of the comparative of the corresponding adjective, e.g. *alte* (loftily) has the comparative *altius* (more loftily) from *altus* (lofty, high); likewise *plus* (more) connects with *multum* (much). The superlative of an adverb is formed from the superlative of the corresponding adjective by means of the termination *-e*, e.g. *altissime* (most loftily) from *altissimus* (most lofty), *densissime* (most densely) from *densissimus* (most dense).

The following adverbs occur in botanical Latin:

<i>abrupte</i>	: abruptly	<i>dilute</i>	: slightly, weakly, palely
<i>acute</i>	: acutely	<i>distincte</i>	: distinctly, clearly
<i>adhuc</i>	: until now, as yet	<i>diu</i>	: a long while, long (in time)
<i>admodum</i>	: quite	<i>egregie</i>	: eminently, excellently
<i>aegre</i>	: unwillingly, hardly, scarcely	<i>eleganter</i>	: gracefully, finely
<i>aeque</i>	: in the manner, equally	<i>eodem</i>	: to the same place
<i>aequaliter</i>	: uniformly, equally	<i>eximie</i>	: excellently
<i>aliquantum</i>	: somewhat	<i>extra, extus</i>	: on the outside (opp. to <i>intra, intus</i> )
<i>aliter</i>	: otherwise	<i>extrinsecus</i>	: from without, outside
<i>alte</i>	: loftily	<i>facile</i>	: easily
<i>alternatim</i>	: alternately	<i>falso</i>	: falsely, incorrectly
<i>altius</i>	: more loftily	<i>fere</i>	: almost, nearly
<i>anguste</i>	: narrowly	<i>forsan, forsitan, fortasse</i>	: perhaps
<i>antea</i>	: before this, formerly	<i>fortiter</i>	: strongly
<i>antice</i>	: anteriorly, in the front	<i>frequenter</i>	: frequently
<i>arcte (arte)</i>	: closely, firmly	<i>gradatim</i>	: little by little, gradually
<i>arcuatim</i>	: in the form of a bow, archedly	<i>grosse</i>	: thickly, coarsely
<i>argute</i>	: acutely, sharply	<i>haud</i>	: not at all
<i>attamen</i>	: and that although	<i>hic</i>	: here
<i>bene</i>	: well, ably, rightly (opp. to <i>male</i> )	<i>hinc</i>	: hence
<i>benevole, benigne</i>	: kindly	<i>hinc inde</i>	: on this side and on that side
<i>bifariam</i>	: on two sides	<i>ibidem</i>	: in the same place
<i>binatim</i>	: in twos	<i>identidem</i>	: repeatedly
<i>breviter</i>	: shortly, briefly	<i>ideo</i>	: on that account, for that reason, therefore
<i>celeriter</i>	: quickly	<i>inde</i>	: from that place, thereafter
<i>certe</i>	: at least	<i>inauste</i>	: unfortunately, unluckily
<i>certo</i>	: certainly	<i>inferne</i>	: below
<i>cetero, ceterum (caeterum)</i>	: for the rest, besides	<i>initio</i>	: at first
<i>cito</i>	: quickly	<i>inprimis (imprimis)</i>	: among the first, chiefly, especially
<i>conspicuo</i>	: conspicuously	<i>insigniter</i>	: remarkably, notably
<i>crasse</i>	: thickly	<i>insuper</i>	: moreover
<i>crebre</i>	: closely, compactly	<i>interdum</i>	: now and then, sometimes
<i>crebriter, crebro</i>	: repeatedly	<i>intra</i>	: on the inside
<i>deinde</i>	: thereafter, next	<i>intrinsecus</i>	: inwardly, inwards
<i>demum</i>	: at length	<i>introrsum</i>	: towards the inside
<i>denique</i>	: lastly	<i>intus</i>	: on the inside (opp. to <i>extra, extus</i> )
<i>dense</i>	: thickly, closely	<i>irregulariter</i>	: irregularly
<i>deorsum</i>	: downwards (opp. to <i>sursum</i> )	<i>iterum</i>	: again, a second time, once more
<i>dextrorsum</i>	: to the right		
<i>difficile, difficiliter, difficulter</i>	: with difficulty		

itidem: in the same way, in like manner  
 jam (iam): now, already  
 late: broadly  
 lateraliter: laterally  
 laxe: loosely  
 leniter: gently, moderately  
 lente: slowly  
 leviter: lightly, not heavily  
 longe: long (opp. to breviter)  
 longitudinaliter: longitudinally  
 magis: more  
 magnopere: greatly, very much  
 male: badly (opp. to bene)  
 manifeste: evidently, manifestly  
 minime: least of all, very little  
 minute: minutely  
 minutissime: most minutely  
 modice: moderately  
 molliter: softly  
 mox: soon  
 nec, necne, neque: and not  
 ni: not  
 nihilominus: notwithstanding, none the less  
 nimio, nimis: excessively, much, very excessively, overmuch  
 non: not  
 nondum: not yet  
 nonnihil: somewhat  
 nonnunquam: now and then  
 nunc: now  
 nunquam: never  
 nuper: lately  
 oblique: obliquely  
 obscure: darkly, indistinctly  
 obsolete: obsoletely  
 olim: formerly, once  
 omnino: wholly, entirely  
 paene: almost  
 pallide: palely (opp. to saturate)  
 parce, parciter: sparingly  
 pariter: equally, in like manner  
 parum: too little  
 passim: in every direction, at random, everywhere  
 paucæ: few

paulatim: little by little  
 paulum (pauillum): little  
 paululum: a very little  
 pauxillum: a little  
 peltatim: peltately  
 penitus: inwardly  
 peranguste: very narrowly  
 plane: plainly, distinctly  
 plerumque: mostly, commonly  
 pluries: often, frequently  
 post, postea: afterwards  
 postice: at the back (opp. to antice)  
 postremo: at last, finally  
 potius: rather  
 præalte: very deeply  
 præcipue: chiefly, principally  
 præsertim: especially  
 præterea: moreover, besides  
 primitus: at first, originally  
 primo: in the beginning  
 primum: first  
 profunde: deeply  
 prominenter: prominently  
 promiscue: promiscuously, indiscriminately  
 prorsus: forwards, straight on  
 putide: badly, absurdly  
 quam: as much as, than  
 quandocumque: whenever, as often as  
 quaquaversus: to all sides  
 quodammodo: in a certain manner  
 rare: thinly raro: seldom  
 reapse: in fact, actually  
 remote: remotely  
 remotiuscule: somewhat remotely  
 retrorsum: backwards  
 revera: truly, really  
 rite: rightly, well  
 saepe: often, many times  
 saltem: at least  
 sat, satis: enough, sufficiently  
 saturate: fully, richly, intensely  
 (opp. to dilute, pallide)  
 scilicet: that is to say, evidently  
 secundatim: with parts directed to one side only, all in one direction

sedule: diligently  
 semel: once  
 semote: separately  
 semper: always  
 seorsim, seorsum: separately  
 sero: late  
 sic: so, thus  
 simul: at the same time, together  
 similiter: in like manner, similarly  
 sinistrorum: towards the left  
 solemniter: in the usual manner  
 sordide: dirtily  
 sparse: sparsely  
 sparsim: scatteredly, here and there  
 statim: immediately, at once  
 subito: suddenly  
 subtiliter: finely  
 summe: extremely  
 superne: from above  
 sursum: upwards (opp. to deorsum)  
 tam: so  
 tamen: notwithstanding, nevertheless  
 tamquam: as much as, as if  
 tantum: only, merely

tarde: slowly  
 tenuiter: thinly  
 transverse: transversely  
 tum, tunc: then  
 ubique: anywhere, everywhere  
 ultimo: finally  
 unde: from which place, whence  
 undecumque: from wherever  
 undique: from all parts, on all sides, in every part  
 usque: up to, all the way to (usually with *ad*)  
 ut: as, in the manner that  
 utrinque (utrinque): on both sides, above and below  
 valde: strongly, very  
 vehementer: strongly, forcibly  
 velut: just as, like  
 vero: certainly, assuredly  
 verosimiliter (verosimiliter): most likely  
 vix: scarcely  
 vulgo: commonly

A number of phrases are also used adverbially, e.g. *toto caelo* (completely, the width of the sky apart), *in universum* (as a whole), *ut maximum* (at the most), *ut minimum* (at least), *ut videtur* (apparently, as it seems), *ad normam* (customarily), *ad amussin* (exactly).

11	XI	undecim <i>eleven</i>	undecimus <i>eleventh</i>
12	XII	duodecim <i>twelve</i>	duodecimus <i>twelfth</i>
13	XIII	tredecim	tertius decimus
14	XIII or XIV	quatuordecim	quartus decimus
15	XV	quindecim	quintus decimus
16	XVI	sedecim	sextus decimus
17	XVII	septendecim	septimus decimus
18	XVIII or XIX	duodeviginti	duodevicensimus
19	XVIII or XIX	undeviginti	undevicensimus
20	XX	viginti	vicensimus (vicesimus)
21	XXI	unus et viginti	vicensimus primus
22	XXII	duo et viginti	alter et vicensimus
23	XXIII	tres et viginti	tertius et vicensimus
28	XXVIII	duodetriginta	duodetricensimus
29	XXIX	undetriginta	undetricensimus
30	XXX	triginta	tricensimus
31	XXXI	unus et triginta	unus et tricensimus
40	XXXX or XL	quadraginta	quadragensimus
50	L	quinquaginta	quinquagensimus
60	LX	sexaginta	sexagensimus
70	LXX	septuaginta	septuagensimus
80	LXXX or XXC	octoginta	octogensimus
90	LXXXX or XC	nonaginta	nonagensimus
99	XCIX or IC	undecentum	undecentensimus
100	C	centum	centensimus (centesimus)
101	CI	centum et unus	centensimus primus
150	CL	centum quinqua- ginta	centensimus quinqua- gimus
200	CC	ducenti	ducentensimus
300	CCC	trecenti	trecentensimus
400	CCCC	quadringtoni	quadringtonensimus
500	CI or D	quingenti	quingentensimus
600	IC or DC	sescenti	sescentensimus
700	ICCC or DCC	septingenti	septingentensimus
800	ICCCC or DCCC	octingenti	octingentensimus
900	ICCCCC or DCCCC	nongenti	nongentensimus
1000	CI or M	mille	millensimus
1500	CI, CI or MD	mille quingenti	millensimus quingenten- simus

## CHAPTER VIII

## Numerals and Measurements

Kinds of numerals, p. 108—Table of numerals, p. 108—Declension and use, p. 110  
—Measurements, p. 112—Numerical epithets, p. 113—Relative length, p. 115.

1 Although metric units down to  $\mu$  have now superseded in botanical Latin the earlier mensural standards, and although Arabic numerals for most purposes are preferred to Roman numerals, an acquaintance with old methods of measurement and dating is essential when consulting early literature.

## KINDS OF NUMERALS

2 Numeral adjectives are of the three kinds, exemplified in English by *one* (a Cardinal numeral), *first* (an Ordinal numeral) and *one each* (a Distributive numeral), supplemented by numeral adverbs, exemplified in English by *once*. As stated by Gildersleeve & Lodge, ‘the Cardinal numerals answer the question *quot*, *how many?* and are the numbers used in counting. The Ordinal numerals are derived from these and answer the question *quotus*, *which one in the series?*’ The Distributive numerals answer the question *quoteni*, *how many each?* The numeral adverbs answer the question *quotiens*, *how often? how many times?*

## TABLE OF NUMERALS

3

Arabic Numerals	Roman Numerals	Cardinals		Ordinals	
		unus	one	primus	first
1	I	duo	two	secundus or alter	second
2	II	tres	three	tertius	third
3	III	quatuor	four	quartus	fourth
4	III or IV	quinque	five	quintus	fifth
5	V	sex	six	sextus	sixth
6	VI	septem	seven	septimus	seventh
7	VII	octo	eight	octavus	eighth
8	VIII	novem	nine	nonus	ninth
9	VIII or IX	decem	ten	decimus	tenth

1550	CIO.CI.CI MDL	mille quingenti quinquaginta	millensisus quingenten- simus quinquagensisus
1600	CIO.CI.CI MDC	mille sescenti	millensisus sescentensisus
1602	CIO.CI.CI MDCII	mille sescenti duo	millensisus sescentensisus alter
1650	CIO.CI.CI or MDCL	mille sescenti quin- quaginta	millensisus sescentensisus quinquagensisus
1700	CIO.CI.CC or MDCC	mille septingenti	millensisus septingenten- simus

An alternative ending for ordinals in *-ensimus*, e.g. *sexagensisimus*, is *-esimus*, e.g. *sexagesimus*. *Quatuor* is also spelled *quattuor*.

4 The high numbers in the above table occur only in dates. Thus Clusius's *Rariorum Plantarum Historia* has the date CIO.CI.CI (i.e. 1601) on its title-page; in the text (p. 4) he records that fruits of Laurocerasus were sent to him from Constantinople 'anno septuagesimo quarto & octogesimo sexto supra millesimum & quingentesimum', i.e. in the years 1574 and 1586; lower on the same page he refers to 'anno M.D.LXXXI', i.e. 1581. The title-page of Caspar Bauhin's *Pinax* states that it deals with 'plantarum circiter sex millium nomina', i.e. the names of about 6,000 plants; the first edition is dated 'MDCXXIII', i.e. 1623, the second 'CIO.CI.C. LXXI', i.e. 1671. The use of 'M' for 1,000 comes from its being the first letter of *MILLE* (thousand); earlier, however, the Romans, according to Mommsen, had assigned the value 1,000 to the Greek letter  $\phi$  (phi), rendered by sixteenth-century printers as CIO or CIC or CI, which halved gives CI or CII or D for 500.

5 Chronograms in works of botanical or horticultural interest are fortunately rare. An example is the apparently undated *Hortus candidus* (cf. Stearn, 1947)<sup>1</sup> with the sentence 'annVite sVperI, fLosCVLVs Vt hIC CanDIDVs VIresCat In saeCLa aVrea' containing letters whose numerical values add up to 1695.

#### DECLINATION AND USE

6 The CARDINAL NUMERALS *unus* (1), *duo* (2) and *tres* (3) are declined; the others from *quatuor* (4) to *centum* (100) are used unchanged whatever the gender and case of the noun which they qualify, hence *flos unus*, *flore uno*, *cellula una*, *folium unum*, *folio uno*, but *flores quatuor*, *floribus quatuor*, *cellulae quatuor*, *cellulis quatuor*, *folia quatuor*, *foliis quatuor*.

<sup>1</sup> W. T. Stearn, 'A curiosity of lily literature, the Ebrach Abbey *Hortus candidus*', Roy. Hort. Soc., *Lily Year Book*, 11: 97—100 (1947).

	M.	F.	N.	
Nom.	<b>unus</b>	<b>una</b>	<b>unum</b>	one (as subject)
Acc.	<b>unum</b>	<b>unam</b>	<b>unum</b>	one (as object)
Gen.	<b>unius</b>	<b>unius</b>	<b>unius</b>	of one
Dat.	<b>uni</b>	<b>uni</b>	<b>uni</b>	to or for one
Abl.	<b>uno</b>	<b>una</b>	<b>uno</b>	by, with or from one
	M.	F.	N.	
Nom.	<b>duo</b>	<b>duae</b>	<b>duo</b>	two (as subject)
Acc.	<b>duo or duos</b>	<b>duas</b>	<b>duo</b>	two (as object)
Gen.	<b>duorum</b>	<b>duarum</b>	<b>duorum</b>	of two
Dat.	<b>duobus</b>	<b>duabus</b>	<b>duobus</b>	to or for two
Abl.	<b>duobus</b>	<b>duabus</b>	<b>duobus</b>	by, with or from two
	M.	F.	N.	
Nom.	<b>tres</b>	<b>tres</b>	<b>tria</b>	three (as subject)
Acc.	<b>tres</b>	<b>tres</b>	<b>tria</b>	three (as object)
Gen.	<b>trium</b>	<b>trium</b>	<b>trium</b>	of three
Dat.	<b>tribus</b>	<b>tribus</b>	<b>tribus</b>	to or for three
Abl.	<b>tribus</b>	<b>tribus</b>	<b>tribus</b>	by, with or from three

7 The ORDINALS *primus* (the first), *secundus* (the second), *tertius* (the third), etc., are declined like *unus* above.

8 The DISTRIBUTIVES denote so many each or at each time :

1	<b>singuli</b>	one each	7	<b>septeni</b>	seven each
2	<b>bini</b>	two each	8	<b>octoni</b>	eight each
3	<b>terni</b>	three each	9	<b>noveni</b>	nine each
4	<b>quaterni</b>	four each	10	<b>deni</b>	ten each
5	<b>quini</b>	five each	11	<b>undeni</b>	eleven each
6	<b>seni</b>	six each	12	<b>duodenii</b>	twelve each

They are declined as plural adjectives of the first and second declension :

	M.	F.	N.	
Nom.	<b>terni</b>	<b>ternae</b>	<b>terna</b>	three each
Acc.	<b>ternos</b>	<b>ternas</b>	<b>terna</b>	three each
Gen.	<b>ternorum</b>	<b>ternarum</b>	<b>ternorum</b>	of three each
Dat.	<b>ternis</b>	<b>ternis</b>	<b>ternis</b>	to or for three each
Abl.	<b>ternis</b>	<b>ternis</b>	<b>ternis</b>	by, with or from three each

They are used when specifying the number of parts at a given position, e.g. the number of leaves in a whorl :

<i>folia verticillata</i>	<i>quaterna vel sena</i>
leaves whorled	four or six together
<i>foliis verticillatis</i>	<i>quaternis vel senis</i>
with leaves whorled	four or six together

Using ordinals this could be expressed as

**folia (foliis) in quoque verticillo quatuor vel sex**  
leaves (with leaves) in each whorl four or six

In general it is best to avoid both Latin words and Roman numerals and to use Arabic numerals instead, e.g. to write *folia* 3–14 rather than *folia tria ad quatuordecim*.

**9** NUMERICAL ADVERBS denote how many times something happens:

1	semel	once	5	quinquies (quinquiens)	five times
2	bis	twice	6	sexies (sexiens)	six times
3	ter	thrice	7	septies (septiens)	seven times
4	quater	four times	8	octies (octiens)	eight times

**10** Lindley, following A. P. de Candolle, distinguishes the main numerical terms as follows:

**nullus**, absolutely wanting, none

**solitarius**, **unicus**, one, growing singly

**paucus**, few, the number small, not indefinite

**numerous**, **multus**, numerous, so many that they cannot be counted with accuracy; *or* several, but not of any definite number

#### MEASUREMENTS

**11** Measurements should be expressed in the metric system with the aid of the adjectives *altus* (high), *longus* (long), *latus* (broad) or *crassus* (thick), or the nouns *altitudo* (height or depth), *longitudo* (length), *latitudo* (breadth), *crassitudo* (thickness), *crassities* (thickness), *profunditas* (depth) or *diameter* (diameter):

**valvae 16–30  $\mu$  latae**, valves 16–30  $\mu$  broad

**valvis 16–30  $\mu$  latis**, with valves 16–30  $\mu$  broad

**latitudo valvarum maxima 28–30  $\mu$  minima 16–20  $\mu$** ,

width of valves at maximum 28–30  $\mu$  at minimum 16–20  $\mu$

**arbor 15–50 m. alta, ad 30 cm. diametro, foliis 14–35 cm. longis, 4–10 cm.**

*latis*,

tree 15–50 m. high, to 30 cm. in diameter, with leaves 14–35 cm. long, 4–10 cm. broad

**12** Before the adoption of the metric system, devised in France at the end of the eighteenth century, authors used the traditional units based on the human body such as the foot (*pes*), the span (*spithama*), etc. Linnaeus's *Philosophia botanica*, 262, no. 331 (1751) provides a convenient summary:

**Capillus** (i.e. a hair's width) = *Lineae pars duodecima* =  $\frac{1}{12}$  Paris line = 0·18 mm.

**Linea** = *Linea una Mensurae parisinae* = 2·25 mm.

**Unguis** (i.e. the length of a finger-nail) = *Lineae sex sive uncia dimidia* = 6 lines = 1·35 cm. =  $\frac{1}{2}$  inch (approx.).

**Pollex** (i.e. the length of the terminal joint of the thumb) = *Uncia una parisina* = 1 Paris inch = 12 lines = 2·7 cm. =  $1\frac{1}{2}$  inch (approx.).

**Digitus** (i.e. the length of the index finger) = *Unciae duae* = 3·4 cm. = 2½ inches (approx.).

**Palmus** (i.e. the width of the four fingers together) = *Unciae tres parisienses* = 3 Paris inches = 8 cm. = 3½ inches (approx.).

**Dodrans** (i.e. the distance between the tips of the thumb and the little finger when extended) = *Unciae novem* = 9 Paris inches = 24·3 cm. = 9½ inches (approx.).

**Spithama** (i.e. the distance between the tips of the thumb and the index finger when extended) = *Unciae septem* = 7 Paris inches = 19 cm. = 7½ inches (approx.).

**Pes** (i.e. foot) = *Unciae duodecim* = 12 Paris inches = 32·5 cm. = 13 inches (approx.).

**Cubitus** (i.e. the distance from the elbow to the tip of the middle finger) = *Unciae septendecim* = 17 Paris inches = 46 cm. = 1½ feet (approx.).

**Brachium** (i.e. the distance from the arm-pit to the tip of the middle finger when extended) or **Ulna** = *Unciae viginti quatuor* = 24 Paris inches = 65 cm. = 2 feet 1 inch.

**Orgya** (i.e. the distance between the tips of the middle fingers when the arms are extended) = 6 Paris feet = 1·95 m. = 6½ feet (approx.).

From these are derived the adjectives *uncialis* and *pollicaris* (about 2·7 cm. long), *palmaris* (about 8 cm. long), *spithameus* (about 19 cm. long), *dodrantalis* (about 24·3 cm. long), *pedalis* (about 32·5 cm. long), *cubitalis* (about 46 cm. long), *ulmaris* and *brachialis* (about 65 cm.) and *orgyalis* (about 1·9 m.).

Expressions such as *crassitie pennae cygneae* (with the thickness of a swan's quill) are also used by early authors (see below, p. 118).

#### NUMERICAL EPITHETS

**13** Epithets referring to the number of parts may be formed from Latin or Greek elements or those common to both Greek and Latin or belonging strictly to neither, but as scholars often consider bastard words such as *hexaflorus* to indicate illiteracy, carelessness or bad taste on the part of their coiners it seems proper to avoid unnecessary unions of Greek and Latin; some Greek elements such as *petalum* and *stylus* have become so completely assimilated to Latin that they

now belong equally well to both. The most commonly used of these word-elements in botanical Latin are as follows :

Derived from Latin			Derived from Greek		
1—semi- (e.g. <i>semialatus</i> )			hemi- (e.g. <i>hemipterus</i> )		
1—uni- (e.g. <i>unifolius</i> )			mono- (e.g. <i>monophyllus</i> )		
2—bi- (e.g. <i>biformis</i> )			di- (e.g. <i>dimorphus</i> )		
3—tri- (e.g. <i>tripartitus</i> )			tri- (e.g. <i>trimerus</i> )		
4—quadri- (e.g. <i>quadricolor</i> )			tetra- (e.g. <i>tetrachromus</i> )		
5—quinque- (e.g. <i>quinquenervis</i> )			penta- (e.g. <i>pentaneurus</i> )		
6—sex- (e.g. <i>sexangularis</i> )			hexa- (e.g. <i>hexagonus</i> )		
7—septem- (e.g. <i>septemcostatus</i> )			hepta- (e.g. <i>heptapleurus</i> )		
8—octo- (e.g. <i>octosepalus</i> )			octo- (e.g. <i>octopetalus</i> )		
9—novem-			ennea-		
10—decem-			deca-		
11—undecim-			endeca- or hendeca-		
12—duodecim-			dodeca-		
20—viginti-			icoso-		
few—pauci- (e.g. <i>paucistamineus</i> )			oligo- (e.g. <i>oligostemon</i> )		
many—multi- (e.g. <i>multidentatus</i> )			poly- (e.g. <i>polyodontus</i> )		
Derived from Latin			Treated as both Latin and Greek		
-angled	-angulus	-angulatus		Derived from Greek	
				-gonus	
-anthered			-antherus		
-carpelled	-carpellatus			-gynus	
-coloured	-color			-chromus	
-flowered	-florus			-anthus	
-fruited				-carpus	
-leaved	-folius			-phyllus	
-lobed			-lobus		
-nerved	-nervis				-neurus
	-nervius				
-petaled			-petalus		
-racemed	-racemosus			-botrys,	
				-botryus	
-ribbed	-costatus			-pleurus	
-seeded	-semineus			-spermus	
-sepaled			-sepalus		
-spiked	-spicatus			-stachyus	
-spored				-sporus	
-stamened	-stamineus			-andrus	
				-stemon (us)	
-styled			-stylus		
-tepaled			-tepalus		
-toothed	-dentatus			-odon	
				-odontus	
-veined	-venius			-phlebius	
-winged	-alatus			-pterus	

14 As regards the origin of those treated above as combining with both Greek and Latin elements, it may be noted that *anthera* (from Greek ἀνθέρα flowering) in classical Latin meant 'a medicine composed of flowers', *stylus* (from Greek στύλος), 'stake', *petalum* (from Greek πεταλον), 'plate'; *lobus* is from Greek λοβός, 'lobe of the ear', pod of leguminous plants', while *sepulum* was coined by Necker in the eighteenth century and *tepalum* by Reichenbach in the nineteenth century. So none is truly classical as now used.

#### RELATIVE LENGTH

15 The relation in size between parts is often more constant and taxonomically more useful than their actual size. Thus a certain species may be tall or dwarf according to its conditions of growth, but always has the leaves longer than the flower-stem, while another species may always have the leaves shorter than the flower-stem under similar conditions. Examples below indicate how such proportional relations of organs can be expressed using the nominative (nom.) for the subject of the phrase as in a description or the ablative (abl.) as in a diagnosis.

16 When *aequans* (equalling) or *superans* (surpassing, exceeding, overtaking) is used, whether the subject is in the nominative, e.g. *lobi* (lobes), *petala* (petals), or in the ablative, e.g. *lobis* (with lobes), *petalis* (with petals), the object is put into the accusative, e.g. *tubum* (not *tubus* or *tubo*), *calycem* (not *calyx* or *calyce*):

(a) <i>lobi tubum aequantes</i>	(b) <i>petala calycem superantia</i>
lobes equalling the tube	petals exceeding the calyx
<i>lobis tubum aequantibus</i>	<i>petalis calycem superantibus</i>
with lobes equalling the tube	with petals exceeding the calyx

Equality of two organs in length is often expressed by *longitudine* (with the length) followed by the genitive, e.g. *tubus longitudine loborum*, *petala longitudine calycis*, *filamenta longitudine petalorum*.

17 The insertion of *longitudine* (in length) adds precision :

*lobi corollae longitudine tubum paulo superantes*  
lobes of the corolla in length the tube by a little exceeding

Other useful qualifying words are *haud* (not at all), *fere* (almost), *vix* (hardly), *plus minusve* (more than or less than), *paulo* (by a little), *multo* (by much); more precise are *quarta parte* (by a quarter), etc. (see below); although such expressions as *duabus tertiiis partibus* (by

two third parts, i.e.  $\frac{2}{3}$ ) or *per duos longitudinis trientes* (for two thirds of the length) can be used, fractions are best expressed by numerals :

**prophylla  $\frac{2}{3}$  calycis obtegmentia**

prophylls covering  $\frac{2}{3}$  of the calyx

**stamina longitudine  $\frac{2}{3}$  perigonii partes aequantia**

stamens in length equalling  $\frac{2}{3}$  parts of the perigon

18 When the comparative adjectives *longior* (longer) and *brevior* (shorter) are used to indicate difference, whether agreeing with a word in the nominative, e.g. *folia* (leaves), *haptonema* (haptonema), *internodia* (internodes), or in the ablative, e.g. *foliis* (with leaves), *haptonemate* (with a haptonema), *internodiis* (with internodes), the name of the thing with which it is compared is put in the ablative, e.g. *scapo* (not *scapus* or *scapum*), *cellula* (not *cellulam*), *ramulis* (not *ramuli* or *ramulos*) :

(a) **folia scapo longiora vel paulo breviora**

leaves longer than or a little shorter than the scape

**foliis scapo longioribus vel paulo brevioribus**

with leaves longer than or a little shorter than the scape

(b) **internodia ramulis 1-5plo longiora**

internodes 1 to 5 times longer than the branchlets

**internodiis ramulis 1-5plo longioribus**

with internodes 1 to 5 times longer than the branchlets

(c) **perigonum tubulosum diametro suo duplo longius**

perigon tubular twice as long as its own diameter

**perigonio tubuloso diametro suo duplo longiore**

with perigon tubular twice as long as its own diameter

(d) **filamenta perigonio sesquiloniora, tria interiora tricuspidata cuspide antherifera filamento ipso triplo breviore**

filaments than the perigon longer by a half, the three inner ones tricuspidate with the anther-bearing cusp than its own filament three times shorter (i.e. with the cusp  $\frac{1}{2}$  the length of its own filament)

**filamentis perigonio sesquilonioribus, tribus interioribus tricuspidatis cuspide antherifero filamento ipso triplo breviore**

with filaments than the perigon longer by a half with the three inner ones tricuspidate with the anther-bearing cusp than its own filament three times shorter

(e) **haptonema cellula 20plo longius**

haptonema 20 times longer than the cell

**haptonemate cellula 20plo longiore**

with haptonema 20 times longer than the cell

19 Sometimes it is necessary to use both the above modes of expression together, e.g. *superans* (or *aequans*) and *brevior* (or *longior*) in the same phrase :

**folia internodia aequantia vel eis breviora**

leaves equalling the internodes or shorter than these

Here *internodia* (abl. plural *internodiis*) is in the accusative plural but *eis* (nom. plural *ea*) is in the ablative plural; since *internodia* is plural, *eis* referring to it is likewise plural.

The order could, however, be reversed :

**inflorescentia folio caulino brevior vel hoc superans**

inflorescence than the cauline leaf shorter or this overtopping

*Hoc* (neuter nom. and acc. singular of *hic*) here takes the place of *folium caulimum*.

20 The adverb *quam* (as, than) exemplified in Caesar's statement, *Hibernia dimidio minor est quam Britannia* (Ireland by half smaller is than Britain), is also used in botanical Latin :

(a) **folia 4-5plo longiora quam latiora**

leaves 4 to 5 times longer than broad

(b) **foliis 4-5plo longioribus quam latioribus**

with leaves 4 to 5 times longer than broad

(c) **folia radicalia cauli collateralia breviora quam iste caulis**

radical leaves collateral to the stem shorter than this stem

When *quam* is used, both nouns compared are both in the same case, e.g. both in the nominative or both in the ablative, as may be necessary.

(d) **internodia quam ramuli multo longiora**

internodes much longer than the branchlets

**internodiis quam ramulis multo longioribus**

with internodes much longer than the branchlets

21 To indicate the amount of difference in length or width, such expressions as *quarta parte* (by a quarter), *tertia parte* (by a third), *dimidia parte* or *dimidio* (by a half), *sesqui* (one and half; more by a half), *duplo* (twice), *subduplo* (nearly twice), *triplo* (3 times as much), *quadruplo* or *4plo* (4 times as much), *quintuplo* or *5plo* (5 times as much) have often been used. The following are a few examples :

(a) **spatha pedicellis 2-3plo brevior**

spathe 2-3 times shorter than the pedicels (i.e. spathe  $\frac{1}{2}$  to  $\frac{1}{3}$  as long as the pedicels)

**spatha pedicellis 2-3plo breviore**  
with the spathe 2-3 times shorter than the pedicels [*breviore* is abl. sing. of *brevior*, and agrees with *spatha*]

(b) **calycis dentes tubo vix longiores**  
teeth of the calyx scarcely longer than the tube [*calycis* is gen. sing. of *calyx*, *dentes*, the nom. plur. of *dens*; *longiores* agrees with *dentes*]  
**calycis dentibus tubo vix longioribus**  
with the teeth of the calyx scarcely longer than the tube

(c) **corolla calyce sesquilonigior**  
corolla  $1\frac{1}{2}$  times longer than the calyx (i.e. proportions of corolla to calyx = 3 to 2)  
**corolla calyce sesquiloniore**  
with the corolla  $1\frac{1}{2}$  times longer than the calyx

(d) **filamenta perigonio quarta vel dimidia parte longiora**  
filaments longer than the perigon by a quarter or half  
**filamentis perigonio quarta vel dimidia parte longioribus**  
with the filaments longer than the perigon by a quarter or half

(e) **staminum filamenta inaequalia, tria exteriora antheras longitudine aequantia, tria interiora eis dimidio breviora**  
filaments of stamens unequal, the outer three equalling the anthers in length, the inner three half as long [*staminum* is gen. plur. of *stamen*, *antheras* the accus. plur. of *anthera*, *longitudine* the abl. sing. of *longitudo*]  
**staminum filamentis inaequalibus, tribus exterioribus antheras longitudine aequantibus, tribus interioribus eis dimidio brevioribus**  
with the filaments of the stamens unequal, the outer three equalling the anthers in length, the inner three half as long

(f) **stylus perigonium (corollam) longe superans**  
style much overtopping the perigon (corolla)  
**stylo perigonium (corollam) longe superante**  
with the style much overtopping the perigon (corolla)

(g) **differt floribus dimidio minoribus**  
it differs in having flowers half the size

22 Comparison with natural objects taken as standards occurs in many of the older authors, e.g. :  
**caulis plus quam humanae altitudinis**  
stem more than of the height of a human being  
**verticillastri pisum vix aequantes**  
verticillasters hardly as big as a pea  
**verticillastri avellana minores**  
verticillasters smaller than a hazel-nut  
**pedunculus crassitudine pennae anserinae**  
peduncle with the thickness of a goose-quill

## CHAPTER IX

## Pronouns

Personal pronouns, p. 119—Demonstrative pronouns, p. 120—Reflexive pronouns, p. 121—Possessive pronouns, p. 121—The relative pronoun *Qui*, p. 122—The definite pronoun *Idem*, p. 123—The intensive pronoun *Ipse*, p. 123—The pronouns *Alius* and *Alter*, p. 124.

A pronoun is a word used in place of a noun to refer to a person or thing already mentioned without naming it, thus avoiding repetition of the noun. Pronouns are little used in botanical Latin.

## PERSONAL PRONOUNS

Personal Pronouns refer to the three persons. The Third Person mostly occurs in descriptions, the First Person in comments and annotations, the Second Person in dedications.

First Person			Second Person	
Singular				
Nom.	ego	I	tu	thou
Acc.	me	me	te	thee
Gen.	mei	of me	tui	of thee
Dat.	mihi	to me	tibi	to thee
Abl.	me	by, with or from me	te	by, with or from thee
Plural				
Nom.	nos	we	you (as subject)	
Acc.	nos	us	vos	you (as object)
Gen.	nostri	of us, our	vestri	of you, your
		nostrum	vestrum	
Dat.	nobis	to us	vobis	to you
Abl.	nobis	by, with or from us	vobis	by, with or from you

*Nomina a me proposita.* Names proposed by me.

*Haec est facile maxima totius generis species mihi cognita.* This is easily the largest species of the whole genus known to me.

*Species obscura a nobis non visa.* An obscure species not seen by us.

*Specimina nobis desunt.* Specimens are lacking (not available) to us.

## PRONOUNS

[CH. IX]

## Third Person

## Singular

Nom.	is	he	ea	she	id	it (as subject)
Acc.	eum	him	eam	her	id	it (as object)
Gen.	ejus	his, of him	ejus	her, hers, of	ejus	its, of it
(eius)			(eius)	her	(eius)	
Dat.	ei	to him	ei	to her	ei	to it
Abl.	eo	by, with or from him	ea	by, with or from her	eo	by, with or from it

## Plural

Nom.	ei (ii)	they	eae	they	ea	they
Acc.	eos	them	eas	them	ea	them
Gen.	eorum	their, of them	earum	their, of them	eorum	their, of them
Dat.	eis (iis)	to them	eis (iis)	to them	eis (iis)	to them
Abl.	eis (iis)	by with, or from them	eis (iis)	by, with or from them	eis (iis)	by with, or from them

With regard to the Third Person, it should be noted that the gender used is that of the noun to which it refers; thus the pronoun for *petiolus* (masculine) would be *is*, for *lamina* (feminine) *ea*, for *folium* (neuter) *id*. Hence in *lamina basi in petiolum angustata eumque marginans* (blade at base narrowed into the petiole and margining it) the pronoun *eum* (masc. acc. sing. of *is*) refers to *petiolum* (acc. sing. of *petiolus*) and agrees with it in gender, case and number.

## DEMONSTRATIVE PRONOUNS

Demonstrative Pronouns are *is*, *ea*, *id*, meaning 'that, he, she, it', as above and generally used, and *hic*, *haec*, *hoc*, meaning 'this, he, she, it' with a special sense of nearness, as opposed to *ille*, *illa*, *illud*, 'that, he, she, it', with a sense of remoteness, 'yonder'; when a distinction is made between two kinds, *hic* usually indicates the latter one, *ille* the former one.

## Singular

Nom.	M.	F.	N.	M.	F.	N.
Acc.	hic	haec	hoc	ille	illa	illud
Gen.	hunc	hanc	hoc	illum	illam	illud
Gen.	hujus	hujus	hujus	illius	illius	illius
Dat.	huic	huic	huic	illi	illi	illi
Abl.	hoc	hac	hoc	illo	illa	illo

## Plural

Nom.	hi	hae	haec	illi	illae	illa
Acc.	hos	has	haec	illos	illas	illa
Gen.	horum	harum	horum	illorum	illarum	illorum
Dat.	his	his	his	illis	illis	illis
Abl.	his	his	his	illis	illis	illis

[CH. IX]

## REFLEXIVE AND POSSESSIVE PRONOUNS

121

Formas hujus habemus notabiles. We have noteworthy forms of this.

*A proxima Poa persica distinguitur radiis patentissimis (in illa erectiusculis).* From the very near *Poa persica* it is distinguished by the very patent rays (in that [i.e. *P. persica*] rather erect).

*Spiculae illis C. flavescentis breviores.* Spikelets shorter than those of *C. flavescens*.

*Iris notha, I. spuria atque illarum varietates.* *Iris notha*, *I. spuria* and their varieties.

*Folia omnia radicalia, illis S. scopariae similia.* Leaves all radical, similar to those of *S. scoparia*.

*Habitu Galio lucido simile, characteribus ad G. palustre magis accedit; ab illo differt foliis floribusque ab hoc habitu.* In habit similar to *Galium lucidum*, by its characters it approaches more to *G. palustre*; from the former it differs in the leaves and flowers, from the latter in the habit.

*His valde affinis est species austro-Africana.* To these strongly akin is a South African species.

## REFLEXIVE PRONOUNS

Reflexive Pronouns in Latin give the emphasis that the addition of 'self' to a personal pronoun gives in English.

Acc.	se, sese	itself, himself, herself, themselves
Gen.	sui	of itself, etc.
Dat.	sibi	to or for itself, etc.
Abl.	se, sese	by, with or from itself, etc.

*Species mexicanae inter sese arcte affines.* Mexican species between themselves closely related.

*Isandra includit species antheris inter se aequalibus.* *Isandra* includes species with anthers between themselves equal.

## POSSESSIVE PRONOUNS

Possessive Pronouns have the function of adjectives.

## Singular

Nom.	M.	F.	N.
Acc.	meus	mea	meum
Gen.	meum	meam	meum
Dat.	mei	meae	mei
Abl.	meo	meae	meo
	meo	mea	meo

my . . . (as subject)  
my . . . (as object)  
of my . . .  
to or for my . . .  
by, with or from my . . .

Plural					
Nom.	mei	meae	mea	my . . . (as subject)	
Acc.	meos	meas	mea	my . . . (as object)	
Gen.	meorum	mearum	meorum	of my . . .	
Dat.	meis	meis	meis	to or for my . . .	
Abl.	meis	meis	meis	by, with or from my . . .	

Similarly declined are *tuus, tua, tuum* (thy) and *suus, sua, suum* (his, her, its, their); the plurals *noster, nostra, nostrum* (our) and *vester, vestra, vestrum* (your) are declined like *glaber* (adj. Group A; see p. 93).

**Specimina pro studiis suis examinata.** Specimens examined for his studies.

**Linnaeus species suas generis Marrubii in duos ordines instruxit.** Linnaeus arranged his species of the genus *Marrubium* in two groups.

### THE RELATIVE PRONOUN QUI

The Relative Pronoun *qui* (which) is used to add subordinate sentences, usually in diagnoses or titles of books.

#### Singular

	M.	F.	N.	
Nom.	qui	quae	quod	which (as subject)
Acc.	quem	quam	quod	which (as object)
Gen.	cujus	cujus	cujus	of which
Dat.	cui	cui	cui	to which
Abl.	quo	qua	quo	by, with or from which

#### Plural

Nom.	qui	quae	quae	which (as subject)
Acc.	quos	quas	quae	which (as object)
Gen.	quorum	quarum	quorum	of which
Dat.	quibus	quibus	quibus	to which
Abl.	quibus	quibus	quibus	by, with or from which

**Ilex mexicana, quae [f., nom. sing.] cum Pileostegia congruit.** *Ilex mexicana*, which agrees with *Pileostegia*.

**Species obscura, cuius [f., gen. sing.] folia tantum cognita sunt.** An obscure species, of which only the leaves are known.

**Species notae 8, quarum [f., gen. pl.] 1 Novo-Caledonica, 2 Novo-Zelandicae, caeterae Australianae.** Known species 8, of which 1 New Caledonian, 2 New Zealand, the rest Australian.

**Variat magnitudine fructuum qui [m., nom. pl.] longitudinem 1-2 cm. habent.** It varies in the size of the fruits, which have a length of 1-2 cm.

### THE DEFINITE PRONOUN IDEM

The Definite Pronoun *idem* (the same) is declined as follows:

#### Singular

	M.	F.	N.	
Nom.	idem	eadem	idem	the same (as subject)
Acc.	eundem	eandem	idem	the same (as object)
Gen.	eiusdem	eiusdem	eiusdem	of the same
Dat.	eidem	eidem	eidem	to or for the same
Abl.	eodem	eadem	eodem	by, with or from the same

#### Plural

	M.	F.	N.	
Nom.	idem, eidem	eaedem	eadem	the same (as subject)
Acc.	eosdem	easdem	eadem	the same (as object)
Gen.	eorundem	earundem	eorundem	of the same
Dat.	isdem	isdem	isdem	to or for the same
Abl.	isdem	isdem	isdem	by, with or from the same

**Planta Linnaei eadem ac nostra est.** The plant of Linnaeus is the same as ours.

**Lilium sinicum idem est ac L. concolor.** *Lilium sinicum* is the same as *L. concolor*.

**In eadem specie variat etiamque in eodem individuo.** It varies in the same species and even in the same individual.

**Eidem** is sometimes used as the dative or ablative plural instead of *isdem*.

### THE INTENSIVE PRONOUN IPSE

The Intensive Pronoun *ipse* (himself), *ipsa* (herself), *ipsum* (itself) is also used for emphasis.

#### Singular

	M.	F.	N.	
Nom.	ipse	ipsa	ipsum	himself (m.), herself (f.), itself (n.) (as subject)
Acc.	ipsum	ipsam	ipsum	himself (m.), herself (f.), itself (n.) (as object)
Gen.	ipsius	ipsius	ipsius	of himself, etc.
Dat.	ipsi	ipsi	ipsi	to or for himself, etc.
Abl.	ipso	ipsa	ipso	by, with or from himself, etc.

#### Plural

	M.	F.	N.	
Nom.	ipsi	ipsae	ipsa	themselves (as subject)
Acc.	ipsos	ipsas	ipsa	themselves (as object)
Gen.	ipsorum	ipsarum	ipsorum	of themselves
Dat.	ipsis	ipsis	ipsis	to or for themselves
Abl.	ipsis	ipsis	ipsis	by, with or from themselves

**Characteres a me ipso haud observati.** Characters by me myself not observed.

## THE PRONOUNS ALIUS AND ALTER

*Alius* (other, another) is declined as follows :

<i>Singular</i>					
Nom.	M.	F.	N.		
Nom.	alius	alia	aliud	the other (as subject)	
Acc.	alium	aliam	aliud	the other (as object)	
Gen.	alius	alius	alius	of the other	
Dat.	ali	alii	ali	to or for the other	
Abl.	alio	alia	alio	by, with or from the other	
<i>Plural</i>					
Nom.	ali	aliae	alia	the others (as subject)	
Acc.	alios	alias	alia	the others (as object)	
Gen.	aliorum	aliarum	aliorum	of the others	
Dat.	aliis	aliis	aliis	to or for the others	
Abl.	aliis	aliis	aliis	by, with or from the others	

A D. *bicolore colore corollae inter alia differt.* From D. *bicolor* it differs among other [characters] by the colour of the corolla.

*Ad sunt alia specimina in aliis herbariis.* There are other specimens in other herbaria.

*Species pulchra nulli alii arctius affinis.* A beautiful species to no other more closely akin.

*Alter* (one of two, the other, the second) is declined as follows :

<i>Singular</i>					
Nom.	M.	F.	N.		
Nom.	alter	altera	alterum	the other, etc. (as subject)	
Acc.	alterum	alteram	alterum	the other, etc. (as object)	
Gen.	alterius	alterius	alterius	of the other, etc.	
Dat.	alteri	alteri	alteri	to or for the other, etc.	
Abl.	altero	altera	altero	by, with or from the other, etc.	
<i>Plural</i>					
Nom.	alteri	alterae	altera	the others, etc. (as subject)	
Acc.	altros	altros	altera	the others, etc. (as object)	
Gen.	alterorum	alterarum	alterorum	of the others, etc.	
Dat.	alteris	alteris	alteris	to or for the others, etc.	
Abl.	alteris	alteris	alteris	by, with or from the others, etc.	

*Specimen alterum nervos laterales habet.* The second specimen of the two has lateral nerves.

*Alter* is used to indicate one or other of two, *alius* one or other of several.

## CHAPTER X

## Prepositions

Prepositions with the accusative, p. 125—Prepositions with the ablative, p. 126—English prepositions and their Latin equivalents, p. 126.

Prepositions are words inserted to make clear the relation of nouns, adjectives and pronouns to other words in the same phrase or sentence and are used in Latin when this relation is not plainly evident from the case-endings alone. Thus in the phrase *in sylva Amazonica ad fluvium Negro* (in Amazonian forest at the Rio Negro) both *in* (in) and *ad* (at) are prepositions. Likewise in the description *folia infra medium latissima, sed ad basim in petiolum protracta* (leaves below the middle broadest, but at base into the petiole drawn out) the words *infra*, *ad* and *in* are prepositions.

Most prepositions require that the noun associated with them should be in the accusative case, e.g. *versus basim* (towards the base). Others take the ablative, e.g. *e basi* (from the base). Only a few, e.g. *clam, in, sub, super* and *subter*, can be used with either, according to the context. These take the accusative when they indicate motion towards or into, even if metaphorical, and the ablative when they indicate rest at, i.e. a fixed state. Hence, the organs of plants being usually stationary when described, these prepositions are generally used with the ablative in botanical Latin.

A preposition is usually placed immediately before the noun it governs; but *versus* and *penes* are often placed after it, e.g. *basim versus* (towards the base).

## PREPOSITIONS WITH THE ACCUSATIVE

<i>ad</i> : to, towards, at	<i>clam</i> : unknown to, without knowledge of
<i>adversus</i> : opposite to, over against	<i>contra</i> : against, contrary to
<i>ante</i> : before	<i>erga</i> : towards (not used of places)
<i>apud</i> : according to, in the writings of	<i>extra</i> : outside of
<i>circum</i> : around	<i>in</i> : into
<i>circa, circiter</i> : about, around	<i>infra</i> : below, beneath
<i>cis, citra</i> : on this side of	<i>inter</i> : between, among, during

intra: inside, within  
 juxta: next to, close to, according to, adjoining to  
 ob: because of  
 penes: in the power of  
 per: through, by means of, owing to, during  
 pone: behind  
 post: after, behind  
 praeter: except for  
 prope: near

propter: on account of  
 secundum: according to, beside  
 secus: along  
 sub: at, to beneath (motion)  
 subter: to below, beneath  
 super: over  
 supra: above  
 trans: across, on the other side  
 ultra: beyond  
 versus: towards, -ward

## PREPOSITIONS WITH THE ABLATIVE

a, ab: from, by  
 absque: without, lacking  
 clam: unknown to  
 coram: in the presence of  
 cum: with  
 de: concerning, from  
 e, ex: from, out of  
 in: in, among

prae: before, in front of  
 pro: for, on behalf of, as  
 sine: without, lacking  
 sub: under (rest)  
 subter: below, beneath  
 super: upon  
 tenus: as far as, reaching to

## ENGLISH PREPOSITIONS AND THEIR LATIN EQUIVALENTS

above: supra (acc.): *supra medium*, above the middle  
 according to (following): secundum (acc.), apud (acc.), juxta (acc.): *juxta opinionem auctoris*, according to the opinion of the author  
 after: post (acc.): *post florēscentiam*, after flowering  
 against: contra (acc.)  
 along: secus (acc.): *secus venas*, along the veins  
 amidst: inter (acc.)  
 among: inter (acc.), in (abl.): *inter species affines*, among related species  
 around: circum (acc.)  
 as: pro (abl.): *pro specie*, as a species  
 at: ad (acc.), sub (abl.): *ad axillas et nodos*, at axils and nodes; *ad apicem*, at the apex; *ad angulum 70°*, at an angle of 70°; *sub angulo 70°*, at an angle of 70°; *sub anthesi*, at (during) anthesis  
 before: ante (acc.), prae (abl.): *ante anthesin*, before anthesis  
 below: infra (acc.): *infra medium*, below the middle  
 beneath: subter (acc. or abl.)  
 between: inter (acc.): *diametro inter semi- et sesquimillimetrum*, with diameter between 0.5 and 1.5 mm.  
 beyond: ultra (acc.): *ultra petalorum insertionem*, beyond the insertion of the petals

by: a (abl.) or ab (abl.): *a variis auctoribus*, by various authors  
 concerning: de (abl.): *de fructibus et seminibus*, concerning fruits and seeds  
 during: per (acc.)  
 except for: praeter (acc.): *praeter aream geographicam*, except for the geographical area  
 for: pro (abl.): *pro maiore parte*, for the greater part; *pro mutua communicatione*, for reciprocal exchange  
 from: e (abl.) or ex (abl.), a (abl.) or ab (abl.): *e descriptione*, from (according to) the description; *ex affinitate*, from (out of) the relationship; *a praecedenti*, from the preceding; *a specie altera*, from the other species; *a speciebus affinibus*, from related species; *ab illo*, from that  
 front of, in: prae (abl.)  
 in: in (acc. or abl.): *in fructu*, in fruit; *in sicco*, in a dried state; *in parte inferiore*, in the lower part; *in quoque loculo*, in each loculus; *in specie typica*, in the type species; *in sylvis*, in woods  
 in the presence of: coram (abl.), penes (acc.)  
 into: in (acc.): *lamina in petiolum angustata*, blade narrowed into the petiole  
 near: prope (acc.): *prope apicem*, near the apex  
 on (above): supra (acc.)  
 on (concerning): de (abl.): *de plantis labiatis*, on labiate plants  
 on (in): in (abl.): *in pagina inferiore*, on the lower surface  
 on account of: ob (acc.), propter (acc.): *ob ovarii formam et structuram*, on account of the shape and structure of the ovary; *propter habitum, pedunculos erectos et corollas nutantes*, on account of the habit, erect peduncles and nodding corollas  
 on that (far) side: trans (acc.)  
 on this (near) side: cis (acc.)  
 out of: e (abl.) or ex (abl.)  
 outside of: extra (acc.)  
 presence of, in the: coram (abl.), penes (acc.)  
 through: per (acc.): *per regiones temperatas*, through (over) temperate regions  
 towards: ad (acc.), erga (acc., not used of place), versus (acc.): *versus foli marginem*, towards the margin of the leaf  
 under: sub (acc. or abl.): *sub lente*, under a lens; *sub microscopio*, under the microscope; *sub ore*, under (below) the mouth  
 unknown to: clam (usually acc., sometimes abl.)  
 up to: ad (acc.): *a basi ad apicem*, from the base up to the apex  
 with: cum (abl.): *cum synonymis*, with synonyms  
 within: intra (acc.): *intra corollam*, within the corolla  
 without (lacking): sine (abl.): *sine numero*, without a number  
 without (outside): extra (acc.)

## CHAPTER XI

# Conjunctions

Conjunctions join words, phrases or sentences so as to indicate a connexion between them, which may be additive and positive, e.g. by the use of *et* (and), *-que* etc., or separative and alternative, e.g. by the use of *vel* (or), *-ve* etc., or qualificative and even contrary, e.g. by the use of *sed* (but), but they exercise no direct grammatical control over the words joined comparable to that of a preposition which takes the ablative or accusative. In the above sentence, 'and', 'but', 'or' and 'so as' are conjunctions.

'And' is commonly translated by *et*, which indicates 'an external connexion of different objects with each other', e.g. *in Europa media et australi et in Asia boreali* (in central and southern Europe and in northern Asia), *ex icona et descriptione* (from the illustration and description), *ramulis hornotinis et paniculis* (with branchlets of this year and panicles), *paniculae laterales et terminales* (panicles lateral and terminal), *nomen a Jacquinio propositum et a Linnaeo approbatum* (name proposed by Jacquin and accepted by Linnaeus), *habitationes specierum et distributio generis geographica* (habitats of the species and geographical distribution of the genus). 'And also' indicating 'a close internal connexion between single words or whole clauses' is translated by *atque* or *ac* or by the termination *-que* added to the last word of a clause, e.g. *nervis primariis atque rete venularum aequaliter elevatis* (with the primary nerves and the network of veins equally raised), *ovarium dense breviterque hirsutum* (ovary densely and shortly hirsute), *filis intricatissimis moniliformibus geniculatisque* (with filaments most entangled, moniliform and geniculate), *stipulae inferiores multo breviores ac angustiores* (lower stipules by much shorter and narrower).

'Or' is commonly translated by *vel* or by the termination *-ve* added to the last word of a clause, e.g. *folia anguste vel late elliptica apice acuta vel obtusa* (leaves narrowly or broadly elliptic at the apex acute or obtuse), *sporis fuliginosis incoloribusve* (with spores sooty or colourless). A stronger and more positive contrast is expressed by *aut*—'aut excludes one term, *vel* makes the two indifferent'—which is occasionally used in botanical Latin. Alphonse de Candolle in his account of *Quercus* in the *Prodromus*, vol. 16 (1864) used *vel* to denote differences in leaf-form apparent on the same branch (represented by

a single herbarium specimen) and *aut* to denote those between different branches (represented by different gatherings); thus *foliis basi cordatis vel obtusis vel acutis* (with leaves at base cordate or obtuse or acute) refers to the variation on a single specimen, *foliis basi acutis aut obtusis* (with leaves at base acute or obtuse) to the variation shown by specimens from different branches, probably from different trees.

The conjunction *seu* or *sive* (or if, or else) mostly appears in book titles, e.g. *Nomenclator botanicus seu Synonymia Plantarum universalis, Fuci sive Plantarum Fucorum Icones*.

For emphasis, after the manner of 'both . . . and', 'either . . . or', 'neither . . . nor' in English, pairs of prepositions are sometimes used as correlatives in Latin, e.g. *et . . . et, vel . . . vel, nec . . . nec*.

Other conjunctions sometimes used in botanical Latin include *ut* (so that, in order that), *quod* (because), *si* (if), *etsi* (even if), *licet* (granting that, although).

## CHAPTER XII

## Verbs

Alice was too puzzled to say anything, so after a minute Humpty Dumpty began again. 'They've a temper, some of them—particularly verbs, they're the proudest—adjectives you can do anything with, but not verbs—however *I* can manage the lot.'—LEWIS CARROLL, *Through the Looking-Glass*

General characters of verbs, p. 130—Conjugations, p. 131—First conjugation, p. 132—Second conjugation, p. 133—Third conjugation, p. 134—Fourth conjugation, p. 136—Deponent and irregular verbs, p. 137.

## GENERAL CHARACTERS OF VERBS

Since a major function of verbs is to express action and since botanical descriptions usually state the characters of plants as observed in the most inactive of all states, i.e. as dead specimens fastened to sheets of paper or mounted on microscope slides, verbs have become almost redundant in modern botanical Latin. Botanists manage verbs best by avoiding them altogether. Their main use now is in diagnostic notes. But earlier authors naturally used them freely; and to read a Latin dissertation or, for example, the extensive phycological discussions in Latin of J. G. Agardh's *Till Algernes Systematik* (1872–90) requires almost as extensive and sound a knowledge of classical Latin as a piece of Augustan prose. This is outside the scope of the present book. For a full treatment of verbs, reference must be made to standard Latin grammars..

For botanical purposes much of the information given in these is unnecessary. It is, however, necessary to distinguish Person, Number, Voice and Tense, which limit the application of the verb, and the parts, such as Infinitive, Particles and Gerundive, which have no limit of persons or number. The Third Person, e.g. *est* (it is), *sunt* (they are), is commonly used, the First Person, e.g. *sum* (I am), *habemus* (we have), occasionally used, the Second Person, e.g. *es* (thou art), *estis* (you are), very rarely and then mostly in dedications and prefaces. The First Person singular in the active voice usually ends in *-m* or *-o*, the Third Person singular in *-t*, the First Person plural in *-mus*, and the

Third Person plural in *-nt* but in the passive voice the Third Person singular ends in *-tur* and the Third Person plural ends in *-ntur*. The pronouns *ego* (I), *nos* (we), *is* (he), *ea* (she), *id* (it) are rarely used, since the ending of the verb itself indicates both person and number. The Tenses commonly used are the Present and Perfect of the Indicative, e.g. *differt* (it differs), *floret* (it flowers), *video* (I see), *vidi* (I have seen or I saw), *vidit* (he has seen), *vidimus* (we have seen), *viderunt* (they have seen), *distinguitur* (it is distinguished), *coluntur* (they are cultivated). Being essentially adjectival in function, the Present Participle, e.g. *purpurascens* (becoming purple), *radicans* (rooting), *repens* (creeping), the Past Participle Passive (Perfect Participle), e.g. *laevigatus* (made smooth), *lectus* (collected), *missus* (sent), and the Gerundive, e.g. *cognoscendus* (to be known), *distinguendus* (to be distinguished), are much more important; they are treated as adjectives (see p. 91). The Perfect Indicative of the Passive is formed from the Past Participle plus the Present Indicative Active of the verb *sum*, e.g. *visus sum* (I have been seen), *visus est* (he has been seen), *visi sumus* (we have been seen), *visi sunt* (they have been seen).

The Gerund is a verbal substantive ending in *-ndum*, with no plural but declined through the singular like other neuters in *-um*, e.g. *ad regnandum natus* (born to rule), *regnandi studium* (the desire of ruling).

The Gerundive is a verbal adjective in *-ndus* and as such is used in agreement with substantives and pronouns.

Active verbs have *two* participles; e.g. *dicens* (present), *dicturus* (future).

Passive verbs have *one*; e.g. *dictus* (past).

Deponent verbs have *three*; e.g. *sequens* (present), *secutus* (past), *secuturus* (future).

## CONJUGATIONS

Verbs are classified into four main groups, called the First, Second, Third and Fourth Conjugations. Those which fit into these are termed 'regular'; there are, however, some 'irregular' verbs which do not. The dictionary entry for a verb states the first person present indicative, e.g. *video* (I see), the first person perfect indicative, e.g. *vidi* (I have seen), the supine (another form of verbal substantive), e.g. *visum* (in order to see) and the number, e.g. 2, of the conjugation to which it belongs, if regular. The conjugation can be recognized by the ending of the infinitive:

- 1 First Conjugation *-are*, e.g. *emendare* (to correct), *habitare* (to inhabit).
- 2 Second Conjugation *-ère*, e.g. *florère* (to flower), *vidère* (to see); see p. 133.
- 3 Third Conjugation *-ître*, e.g. *colître* (to cultivate); see p. 134.
- 4 Fourth Conjugation *-ire*, e.g. *invenire* (to find); see p. 136.

It should be noted that the Third Conjugation is not so uniform as the other three, and its perfect participles are formed according to several disconcertingly different patterns.

There are also deponent and irregular verbs; see p. 137.

FIRST CONJUGATION

*Active Voice*

Present Indicative

habito	I inhabit
habitat	it (he, she) inhabits
habitamus	we inhabit
habitant	they inhabit

Perfect Indicative

habitavi	I have inhabited (I inhabited)
habitavit	it (he, she) has inhabited
habitavimus	we have inhabited
habitaverunt	they have inhabited

Present Infinitive

habitare	to inhabit
----------	------------

Present Participle

habitans	inhabiting
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*Passive Voice*

Present Indicative

habitor	I am inhabited
habitatur	it (he, she) is inhabited
habitamur	we are inhabited
habitantur	they are inhabited

Perfect Participle

habitatus (m.), habitata (f.), habitatum (n.)	inhabited
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Gerundive

habitandus (m.), habitanda (f.), habitandum (n.)	to be inhabited
--	-----------------

In the following list the first person singular is given first, e.g. *amo* (I love), then the third person singular, e.g. *amat* (it loves), the present participle, e.g. *amans* (loving), and the perfect participle (past participle passive) masculine, e.g. *amatus* (loved).

amo	amat	amans	amatus	<i>love</i>
asservo	asservat	asservans	asservatus	<i>guard carefully</i>
amplifico	amplificat	amplificans	amplificatus	<i>enlarge</i>
angusto	angustat	angustans	angustatus	<i>make narrow</i>
cito	citat	citans	citatus	<i>cite</i>
comparo	comparat	comparans	comparatus	<i>compare</i>
conservo	conservat	conservans	conservatus	<i>preserve</i>
determino	determinat	determinans	determinatus	<i>determine</i>
discrepo	discrepat	discrepans	—	<i>differ</i>
disto	distat	distans	—	<i>stand apart</i>
dono	donat	donans	donatus	<i>give</i>
emendo	emendat	emendans	emendatus	<i>amend</i>

habito	habitat	habitans	habitatus	<i>inhabit</i>
illstro	illustrat	illustrans	illustratus	<i>elucidate</i>
indico	indicat	indicans	indicatus	<i>indicate</i>
observo	observat	observans	observatus	<i>observe</i>
plico	plicat	plicans	plicatus	<i>fold</i>
quadro	quadrat	quadrans	quadratus	<i>agree</i>
revoco	revocat	revocans	revocatus	<i>recall</i>
seco	secat	secans	sectus	<i>cut</i>
vario	variat	varians	variatus	<i>vary</i>

*Pulmonaria tuberosa amat loca subumbrosa.* Pulmonaria tuberosa loves rather shady places.

*Habitat in collibus siccis Galloprovinciae.* It dwells on dry hills of Provence.

*Ab A. saxatili leguminibus dispermis distat.* From A. saxatilis it stands apart by its two-seeded legumes.

*Specimen originarium in herbario Linnaei asservatum est.* The original [type] specimen is preserved in the herbarium of Linnaeus.

*Quoad folia et calyces O. scoparium in memoriam revocat.* As regards leaves and calyx it recalls O. scoparia.

SECOND CONJUGATION

*Active Voice*

Present Indicative

video	I see
videt	he (she) sees
videmus	we see
vident	they see

Perfect Indicative

vidi	I have seen (I saw)
vidit	he (she) has seen
vidimus	we have seen
viderunt	they have seen

Present Infinitive

videre	to see
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Present Participle

videns	seeing
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*Passive Voice*

Present Indicative

videor	I am seen (I seem)
videtur	he (she, it) is seen, it seems
videmur	we are seen
videntur	they are seen

Perfect Participle Passive

visus (m.), visa (f.), visum (n.)	seen
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Gerundive

videndus (m.), videnda (f.), videndum (n.)	to be seen
--	------------

## VERBS

## [CH. XII]

adhaereo	adhaeret	adhaerens	adhaesus	<i>adhere to</i>
appareo	apparet	apparens	—	<i>appear</i>
augeo	auget	augens	auctus	<i>increase</i>
careo	caret	carens	—	<i>lack</i>
floreo	floret	florens	—	<i>flower</i>
gaudeo	gaudet	gaudens	—	<i>rejoice in</i>
habeo	habet	habens	habitus	<i>have</i>
misceo	misces	miscens	mixtus	<i>mix</i>
pertineo	pertinet	pertinens	—	<i>belong</i>
praebeo	praebet	praebens	praebitus	<i>exhibit</i>
teneo	tenet	tenens	—	<i>hold</i>
video	videt	videns	visus	<i>see</i>

**Bazzania brasiliensis** *habet folia minora flava*. Bazzania brasiliensis has smaller yellowish leaves.

**Haec planta medium tenet inter P. montanam et P. tuberosam.** This plant holds a position midway between P. montana and P. tuberosa.

**Sporas vidi ellipsoideas.** I have seen ellipsoid spores.

## CH. XII] THIRD CONJUGATION

accedo	accedit	accedens	accessus	<i>approach</i>
addo	addit	—	additus	<i>add to</i>
attingo	attingit	attingens	attactus	<i>reach</i>
cingo	cingit	cingens	cinctus	<i>surround</i>
cognosco	cognoscit	cognoscens	cognitus	<i>know</i>
colligo	colligit	colligens	collectus	<i>gather</i>
colo	colit	colens	cultus	<i>cultivate</i>
congruo	congruit	congruens	—	<i>agree</i>
conjungo	conjungit	conjungens	conjunctus	<i>unite</i>
corrido	corrigit	corrigens	correctus	<i>correct</i>
cresco	crescit	crescens	eretus	<i>grow</i>
detego	detegit	detegens	detectus	<i>discover</i>
dico	dicit	dicens	dictus	<i>say</i>
distinguo	distinguit	distinguens	distinctus	<i>distinguish</i>
divido	dividit	dividens	divisus	<i>divide</i>
ēdo	edit	edens	editus	<i>publish</i>
ēdo	edit	edens	esus	<i>eat</i>
emitto	emittit	emittens	emissus	<i>put forth</i>
evado	evadit	evadens	evasus	<i>pass beyond</i>
facio	facit	faciens	factus	<i>make</i>
findo	findit	findens	fissus	<i>split</i>
frango	frangit	frangens	fractus	<i>break</i>
insero	inserit	inserens	insertus	<i>insert</i>
instruo	instruit	instruens	instructus	<i>provide</i>
jungo	jungit	jungens	junctus	<i>join</i>
lego	legit	legens	lectus	<i>gather</i>
matureesco	maturescit	maturescens	—	<i>ripen</i>
mitto	mittit	mittens	missus	<i>send</i>
neglego	neglegit	neglegens	neglectus	<i>neglect</i>
occulo	occult	occulens	occultus	<i>hide</i>
occurro	occurrit	occurrens	—	<i>occur</i>
percurro	percurrit	percurrents	percursus	<i>run along</i>
pingo	pingit	pingens	pictus	<i>paint</i>
pono	ponit	ponens	positus	<i>put</i>
prodo	prodit	prodens	proditus	<i>bring forth</i>
recedo	recedit	recedens	recessus	<i>recede</i>
rejicio	rejicit	rejiciens	rejectus	<i>cast out</i>
rumpo	rumpit	rumpens	ruptus	<i>burst</i>
scindo	scindit	scindens	scissus	<i>tear</i>
scribo	scribit	scribens	scriptus	<i>write</i>
sisto	sistit	sistens	—	<i>stand</i>
tego	tegit	tegens	tectus	<i>cover</i>
vivo	vivit	vivens	—	<i>live</i>

**Crescit in uliginosis.** It grows in marshes.

## THIRD CONJUGATION

## Active Voice

## Present Indicative

mitto	I send
mittit	he (she) sends
mittimus	we send
mittunt	they send

## Perfect Indicative

misi	I have sent
misit	he (she) has sent
misimus	we have sent
miserunt	they have sent

Present Infinitive **mittere** to sendPresent Participle **mittens** sending

## Passive Voice

## Present Indicative

mittor	I am sent
mittitur	he (she, it) is sent
mittimur	we are sent
mittuntur	they are sent

Perfect Participle **missus** (m.), **missa** (f.), **missum** (n.) sentGerundive **mittendus** (m.), **mittenda** (f.), **mittendum** (n.) to be sent

Linnaeus formam primariam et praeter hanc duas varietates  $\beta$  et  $\gamma$  distinxit. Linnaeus distinguished the primary form (the type) and besides this two varieties  $\beta$  and  $\gamma$ .

## FOURTH CONJUGATION

## Active Voice

## Present Indicative

invenio	I find
invenit	he (she) finds
invenimus	we find
inveniunt	they find

## Perfect Indicative

inveni	I have found (I found)
invenit	he (she) has found
invenimus	we have found
inveniunt	they have found

## Present Infinitive invenire to find

## Present Participle inveniens finding

## Passive Voice

## Present Indicative

invenior	I am found
invenitur	he (she, it) is found
inveninmur	we are found
inveniuntur	they are found

Perfect Participle inventus (m.), inventa (f.),  
inventum (n.) foundGerundive inveniendus (m.), invenienda (f.),  
inveniendum (n.) to be found

aperio	aperit	aperiens	apertus	open
convenio	convenit	conveniens	conventus	agree
finio	finit	finiens	finitus	limit
fulcio	fulcit	fulciens	fultus	support
invenio	invenit	inveniens	inventus	find
partio	partit	partiens	partitus	divide

Species bene notae 2 boreali-Americanae, quarum una etiam in Japonia invenitur. Species properly known 2 north-American, of which one is moreover found in Japan.

Nostra planta cum bahamensi (typo Linnaeano) bene convenit. Our plant agrees well with the Bahaman plant (the Linnaean type).

In itinere quo vere anni 1849 feci duas plantas inveni. On the journey which I made in the spring of the year 1849 I found two plants.

In Cuba insula primus invenit Houstonus. Houston first discovered it on the island of Cuba.

## DEONENT AND IRREGULAR VERBS

Deponent and irregular verbs diverge from the patterns of the four conjugations given above.

DEONENT VERBS have a passive form but an active meaning, except in the gerundive, e.g.:

## Present Indicative

utor	I use
utitur	he (she) uses
utimur	we use
utuntur	they use

## Perfect Indicative

usus	sum	I have used (I used)
usus	est	he (she) has used
usi	sumus	we have used
usi	sunt	they have used

## Infinitive uti to use

## Present Participle utens using

## Past Participle usus having used

Gerundive utendus (m.), utenda (f.), utendum (n.)  
to be used

IRREGULAR VERBS derived from two roots are exemplified by *sum* (I am) and *fero* (I bear) and their derivatives:

## Present Indicative

sum	I am
es	thou art
est	he (she, it) is
sumus	we are
estis	you are
sunt	they are

## Future Indicative

ero	I shall be
eris	thou wilt be
erit	he (she, it) will be
erimus	we shall be
eritis	you will be
erunt	they will be

## Perfect Indicative

fui	I have been (I was)
fuisti	thou hast been
fuit	he (she, it) has been
fuimus	we have been
fuistis	you have been
fuerunt	they have been

Present Infinitive	<b>esse</b>	to be
Perfect Infinitive	<b>fuisse</b>	to have been
Present Participle	none	
Gerundive	none	

*Sum* is a particularly important verb because it helps to form the passive of other verbs, e.g.:

**Divisus est.** It has been divided.

**Stamina a spiculis examinatis jam delapsa fuerunt.** Stamens from the spikelets examined were already fallen.

One of its derivatives is *possum* (I can), used in observations, e.g.:

**Ad interim juxta J. aculeatum inseri potest.** For the present it can be inserted next to *J. aculeata*.

It is usually associated with the present passive infinitive, e.g. *habitari* (to be inhabited), *videri* (to be seen), *mitti* (to be sent), *inveniri* (to be found).

#### Present Indicative

<b>possum</b>	I can
<b>potest</b>	he (she, it) can
<b>possumus</b>	we can
<b>possunt</b>	they can

#### Present Subjunctive

<b>possim</b>	I may be able to (could)
<b>possit</b>	he (she, it) may be able to (could)
<b>possimus</b>	we may be able to (could)
<b>possint</b>	they may be able to (could)

The subjunctive, rare in botanical Latin, is used when one activity is conditional or dependent upon another or to express anticipation.

**Subspecies esse possit Lecideae gelatinosae.** It could be a subspecies of *Lecidea gelatinosa*.

Other derivatives of *sum* are:

<b>absum</b>	<b>abest</b>	be absent
<b>adsum</b>	<b>adest</b>	be present
<b>desum</b>	<b>deest</b>	be wanting
<b>prosum</b>	<b>prodest</b>	be of use

**Genus ex chartere dato videtur Arthropogoni affine sed aristae desunt.**

The genus from the character given appears akin to *Arthropogon* but the awns are wanting.

**Radix deest et flos unicus adest.** The root is lacking and only one flower is present.

*Fero* (I bear, carry) is mostly used in its present participle *ferens* (bearing, carrying):

#### Present Indicative

<b>fero</b>	I bear
<b>fert</b>	he (she, it) bears
<b>ferimus</b>	we bear
<b>ferunt</b>	they bear

**Infinitive ferre** to bear

**Present Participle ferens** bearing

**Gerundive ferendus (m.), ferenda (f.), ferendum (n.)**  
to be borne

<b>differo</b>	<b>dift</b>	<b>differens</b>	<i>differ</i>
<b>profero</b>	<b>profert</b>	<b>proferens</b>	<i>bring forth</i>

Here belongs the verb *refert* (it concerns, it refers to) contracted from *rem fert*, used only in the third person singular.

PART THREE  
SYNTAX AND OTHER MATTERS

## CHAPTER XIII

# Diagnoses

Types of diagnoses, p. 143—Diagnostic observations, p. 146—Examples of diagnoses, p. 147.

The noun *diagnosis* (*διαγνώσις*) comes from the verb *διαγνωσκω* ('know one from the other, discern, distinguish') and was used by the Greeks in the general sense of 'means of distinguishing, power of discernment, deciding'. Meaning originally a process or the mental instrument of a process, it now designates their result, and has thus several related but divergent applications. A medical diagnosis is an identification of a disease or pathological condition based on observation of the patient's symptoms, etc. A botanical or zoological diagnosis is a brief statement of the distinguishing features of an organism.

### TYPES OF DIAGNOSES

Diagnoses were formerly divided into two kinds, one giving *differential* characters, the other *essential* characters. As stated by Lindley, 'differential characters express in the least possible space the distinctions between plants; they should contain nothing superfluous. A differential character moreover conveys no information beyond the differences between one thing and another and can be viewed in no other light than as a convenient method of analysis.' To call a 250-word description of a *Pandanus* holotype a 'diagnosis' is to misuse the term. 'The *essential* character of a plant expresses, as its name implies, those peculiarities known by experience to be most essential to it; but admits nothing unimportant or superfluous or that is common to all the species of the same genus or to all the genera of the same order.' For admirable examples of essential characters Lindley referred to Robert Brown's *Prodromus Florae Novae Hollandiae* (1810).

The drafting of diagnoses accordingly calls for an intimate acquaintance with the members of a group. The features selected must be constant for the taxon and, even if not individually uncommon within the group, those mentioned should together form a unique combination therein. Thus Linnaeus in 1753 distinguished his *Bauhinia aculeata*

from all other species of *Bauhinia* by the phrase *caule aculeato* (with prickly stem), this feature being present in none of the others. Usually, however, a diagnosis to be effective must mention a combination of features. Most Linnaean specific names (*nomina specifica legitima* or phrase-names), as distinct from Linnaean binomials, are of this synoptic kind. Thus Linnaeus distinguished his *Bauhinia divaricata* by the phrase *foliis ovatis lobis divaricatis* (with ovate leaves with spreading lobes) from his *B. unguis* with *foliis ovatis lobis parallelis* (with ovate leaves with parallel lobes) and from his *B. variegata* with *foliis cordatis, lobis coadunatis obtusis* (with cordate leaves, with blunt lobes united at their base). Linnaeus devoted much thought to the drafting of these diagnostic phrases, which were for him the true names of species and hence are very important for the typification of Linnaean binomials (cf. Stearn, 1957: 84-87, 126-132; Stearn, 1961a: 17).

Linnaeus held that these diagnoses should not exceed twelve words in length and he and Jacquin even managed on occasion to reduce them to one word. Thus Jacquin's diagnosis of *Ehretia tinifolia* is simply *Ehretia inermis*, of *E. spinosa* simply *Ehretia spinosa*, here as in his *Rauvolfia hirsuta* and *R. tomentosa* the diagnostic word being the same as the specific epithet. As the number of known species grew, and consequently the number of characters needed to distinguish them, his successors found it impossible thus to limit the number of words in a diagnosis; gradually the diagnostic phrase in the ablative case expanded into a short description likewise in the ablative case, although the nominative case was used for extended descriptions and for mention of non-diagnostic features. Thus Linnaeus in his *Species Plantarum*, 1: 448 (1753) provided *Reseda luteola*, dyer's greenweed (see p. 188), with the diagnostic name *Reseda foliis lanceolatis integris, calycibus quadrifidis* (Reseda with entire lanceolate leaves, with four-cleft calyces), which sufficed to distinguish it from the seven other species of *Reseda* named by him. In 1868 the monographer of the *Resedaceae*, Jean Müller of Aargau, needing to distinguish this from the 52 other species of *Reseda* then known, expanded the diagnosis to *foliis indivisis angustis, calyce 4-partito, lamina petali superioris 3-loba, staminibus circa 25, capsulis depresso-obovoideis undulato-rugosis ore contractis acute et valide 3-cuspidatis, seminibus laevibus parvulis* (with leaves undivided narrow, calyx 4-parted, blade of the upper petal 3-lobed, stamens about 25, capsules depressed-obvoid undulately rugose at the mouth contracted



Fig. 8 *Reseda luteola* L.; Weld, Yellow-weed

A, tota planta; B, folium inferum; C, pars supra ramuli floriferi; D, flos cum bractea; E, sectio longitudinalis floris; F, petalum superum; G, petalum laterale; H, petalum inferum; I, stamen; J, sectio transversa ovarii; K, pars ramuli fructiferi; L, capsula; M, semen (from Stella Ross-Craig, *Drawings of British Plants*; 1950)

acutely and strongly 3-cuspidate, seeds smooth rather small). In 1867 Boissier, dealing with 27 oriental species of *Reseda*, gave an even longer diagnosis: *elata glabra parce et stricte ramosa, foliis lanceolato-linearibus elongatis supra basim saepe denticulatis, floribus subsessilibus racemum longissimum strictum formantibus, sepalis persistentibus ovato-oblongis corolla brevioribus, petalorum superiorum laciniis integris vel 2-3-partitis, filamentis persistentibus, capsulis strictis parvis glabris obovato-depressis sub ore contractis acute dentatis profunde 5-sulcatis* (tall glabrous sparingly and erectly branched, with leaves lanceolate-linear elongated above the base often denticulate, flowers almost sessile forming a very long spike-like upright raceme, sepals persistent ovate-oblong shorter than the corolla, laciniae of the upper petals entire or 2-3-parted, filaments persistent, capsules erect small glabrous obovate-depressed below the mouth contracted acutely toothed deeply 5-furrowed). The publication of such comparatively long diagnoses by nineteenth-century authors, who understood very well the distinction between a diagnosis in the ablative dependent upon the generic name and a true description with the organs independently described in the nominative, has misled later authors apparently unaware of this distinction into publishing very long descriptions in the ablative. For this there is no justification in history or convenience.

#### DIAGNOSTIC OBSERVATIONS

The traditional procedure of authors using diagnoses was to give first the diagnosis usually in the ablative, as exemplified above, then a statement of geographical distribution (see Chapter XVII), then a description in the nominative, often followed by an observation stating how the species differed from its allies, such as *Differt haec species a C. pelviformi caule erecto* etc. (This species differs from *C. pelviformis* by its erect stem, etc.), *Distinctissima foliis maximis racemisque patentissimis* (most distinct by its very large leaves and very outspread racemes) or stating concisely the main characters of other species, e.g. *Optime distinguitur a T. jamaicensi, cuius flores caerulei et capsulae tri-alatae sunt* (It is very well distinguished from *T. jamaicensis*, of which the flowers are blue and the capsules three-winged). Ignatius Urban (1848-1931) in his *Symbolae Antillanae* was probably the last botanist to employ extensively this time-honoured method of presentation. His detailed accounts of new species frequently conclude with a helpful note on related species such as that under *Meliosma recurvata* Urban (1921) of Haiti: *Ob inflorescentias elongatas tenues inter omnes species americanas peculiariis. Aliae species domingenses M. impressa Krug et Urb., cuius fructus ignoti sunt, praeterea foliis apice rotundatis v. truncatis,*

*margine integris, nervis lateralibus supra sulcato-impressis, M. Herbertii Rolfe foliis ad ramos floriferos saltem integris, fructibus plures majoribus statim discernendae sunt. M. obtusifolia (Bello) Krug et Urb. (e Portorico), quae fructibus similibus gaudet, foliis 2-3-plo longius petiolatis, multo majoribus, margine integris, inflorescentiis crassioribus recedit* (Peculiar among all American species on account of its elongated slender inflorescences. The other Dominican species are straightway to be distinguished, *M. impressa* Krug & Urban, of which the fruits are unknown, moreover by its leaves at the apex rounded or truncate, at the margin entire, with the lateral nerves on the upper side sulcate-impressed, *M. herbertii* Rolfe by its leaves entire only on flowering branches, its fruits often larger. *M. obtusifolia* (Bello) Krug & Urban (from Puerto Rico), which rejoices in similar fruits, recedes by its much larger leaves entire at the margin with petioles 2 or 3 times longer and thicker inflorescences).

Linnaean phrase-names, exemplified by those of *Bauhinia divaricata* and *Reseda luteola*, from which diagnoses, such as those of Mueller, Boissier and many other authors, notably Robert Brown in his *Prodromus Florae Novae Hollandiae* (1810), were developed, had essentially the same function as the contrasting statements in keys (cf. Stearn 1957: 86; 1959: 17, 18; 1961: xxi). The provision of good keys makes such diagnoses unnecessary. In their place later authors often give diagnostic observations such as *Ab O. calophylla Engler pedicellis supra basin articulatis, inflorescentiis longioribus differt* (From *O. calophylla* Engler it differs by the pedicels articulate above the base, by the longer inflorescences). To these the term 'diagnosis' has now been transferred. Under the International Code of Botanical Nomenclature the publication of such an observation in Latin will suffice for valid publication. Although inadequate as a scientific record, it can serve a useful purpose in indicating the affinities of a taxon provided these are correctly assessed; otherwise it may be virtually useless. Thus W. Wright Smith mentioned his *Magnolia mollicomata* as 'species ex affinitate *M. obovatae*, Thunb. (*M. hypoleucae*, Sieb. et Zucc.) et *M. officinalis* Rehder et Wilson'; but this plant has in fact no close affinity with either. The following examples illustrate the diversity in style and content of diagnoses. The English versions follow fairly closely the order of the Latin so as to demonstrate the manner of construction (see pp. 156, 378), the word order in Latin diverging in many respects from that natural in English.

#### EXAMPLES OF DIAGNOSES

*Alsophila ramisora* Domin: *A. infestae* Kunze affinis sed textura tenui, segmentis sat profunde crenato-dentatis et praesertim venatione et soris ad venarum ramos insidentibus notabilis (Domin, 1929).

Akin to *A. infesta* Kunze but notable for the thin texture, the rather deeply crenate-dentate segments and especially the venation and the sori situated on the branches of veins.

*Arthothelium adriaticum* A. Zahlbruckner: *Arthothelium sardoum* Bagl. tangit, ob apothecia elongata et ob sporas minores minusque septatas ab eo removendum (Zahlbruckner, 1914).

It touches *Arthothelium sardoum* Bagl., by reason of its elongated apothecia and its smaller and less septate spores to be taken away from this.

*Brachylophon anastomosans* Craib; a *B. scortechinii* King foliorum nervis lateralibus paucioribus crassioribus bene intra marginem anastomosantibus, a *B. curtisii* Oliver foliis tenuioribus, ab ambobus rhachi graciliore glabro, pedicellis brevioribus recedit (Craib, 1926).

It separates from *B. scortechinii* King by the fewer thicker lateral nerves of the leaves anastomosing well within the margin, from *B. curtisii* Oliver by the thinner leaves, from both by the more slender glabrous rhachis with shorter pedicles.

*Bryum auratum* Mitten; *B. filiformi* primo adspectu maxime simile, sed foliis fere duplo latioribus cellulis ad eorum apices duplo triplove latioribus et operculo rostrato (Mitten, 1859).

To *B. filiformi* at first sight most similar but with leaves almost twice as broad with the cells at the apices twice or thrice as broad and with the operculum rostrate.

*Corydalis gortschakovii* Schrenk; species insignis floribus suis aureis majusculis (ad 9 lin. longis), a speciebus nobis notis bene distincta; differt a *C. stricta* caule simplicissimo, foliis mollibus, lacinia acutiusculis, bracteis herbaceis inferioribus subpinnatifidis, sepalis minutis basi non deorsum auriculatis, calcari elongato; a *C. sibirica* atque *C. impatiens* radice perenni, caule simplicissimo, floribus majusculis et praeterea a priore lamina petali calcarati obtusissima (in illa acuminate) et siliquis ellipticis (in illa obovatis), a posteriore calcare graciliore limbum aequante (in *C. impatiens* duplo breviore) aliisque notis; a *C. nobilis* haud aegre distinguitur caule toto folioso (in illa a basi ad medium partem nudo), racemo elongato, bracteis superioribus indivisis longe acutatis (in illa obtusis), sepalis parvis, non caudatis neque peltatis vel deorsum auriculatis, calcari graciliore apice haud incrassato (Schrenk, 1841).

A remarkable species quite distinct from the species known to us by its golden rather large (to 9 lines long) flowers; it differs from *C. stricta* by its completely unbranched stem, soft leaves with acutish laciniae, herbaceous bracts, the lower almost pinnatifid, minute sepals at base not downwardly auriculate, elongated spur; from *C. sibirica* and *C. impatiens* by its perennial root, completely unbranched stem, rather large flowers and moreover from the former by the very obtuse lamina of the spurred petal (in that acuminate) and elliptic siliquae (in that obovate) from the latter by the more slender spur equalling the limb (in *C. impatiens* half as long) and other characters; from

*C. nobilis* it is distinguished without difficulty by its completely leafy stem (in that, naked from the base to the middle part), elongated raceme, the undivided long-acute upper bracts (in that obtuse), the small sepals neither caudate nor peltate or downwardly auriculate, the more slender spur not thickened at the tip.

*Deutzia staurothrix* Airy-Shaw; a *D. corymbosa* R. Br. foliorum pilis stellatis utriusque paginae cruciformibus 4-radiatis, rarius 3- vel 5-radiatis statim dignoscenda (Airy-Shaw, 1934).

From *D. corymbosa* R. Br. immediately to be distinguished by the cruciform 4-rayed, rarely 3- or 5-rayed, stellate hairs of each side of the leaves.

*Dryopteris crassinervia* C. Christensen; habitu et textura *D. unita* (Blume) O. Kuntze et affinibus similis et nullo dubio his speciebus proxima, praecipue differt venis basalibus non vere unitis, glabritie frondis, etc. (Christensen, 1934).

In habit and texture like *D. unita* (Blume) O. Kuntze and allies and without doubt close to those species, it differs especially by the basal veins not truly united, by the glabrous state of the fronds, etc.

*Galium petiolatum* Geddes; a *G. rotundifolio* L. foliis petiolatis differt (Geddes, 1928).

From *G. rotundifolium* L. it differs by its petiolate leaves.

*Geranium × magnificum* Hylander; planta inter *G. ibericum* Cav. et *G. platypetalum* F. & M. quasi intermedia et verisimiliter ex hybridatione harum specierum orta, ab ambobus fructibus abortivis differt, quoad formam foliorum cum *G. iberico* sat congruens sed petalis intensius violaceis, plus obcordatis et leviter tantum emarginatis (non ut in *G. platypetalum* margine integerrimis et late cuneatis) et indumento pilis eglandulosis longissimis pilis glandulosis sat brevibus immixtis differt (in *G. iberico* indumentum tantum eglandulosum, in *G. platypetalum* tantum glandulosum) (Hylander, 1961).

Plant almost intermediate between *G. ibericum* Cav. and *G. platypetalum* F. & M. and probably sprung from the hybridization of these species, it differs from both by the abortive fruits, agreeing adequately with *G. ibericum* as regards the shape of the leaves, but it differs in the petals more intensely violet, more obcordate and only lightly emarginate (not as in *G. platypetalum* quite entire and broadly cuneate) and in the indumentum with very long glandless hairs intermixed with moderately short glandular hairs (in *G. ibericum* the indumentum only glandless, in *G. platypetalum* only glandular).

*Helotium subconfluens* Bresadola; species haec ab *Helotio citrinum* (Hedw.) differt ascomatibus minoribus minus coloratis, ascis quoque brevioribus, sed praesertim sporis fusoideis enucleatis (Bresadola, 1903).

This species differs from *Helotium citrinum* (Hedw.) by the smaller less coloured ascomata, the ascii also shorter, but especially by the enucleate fusoid spores.

*Holomitrium muelleri* Hampe: *Holomitrio crispulo* aemulans, differt foliis integerrimis et perichaetio multo breviore (Hampe, 1870).

To *Holomitrium crispulum* comparable, it differs by its quite entire leaves and much shorter perichaetium.

*Kerriochloa* C. E. Hubbard; genus novum, *Ischaemo* L. affine, a quo racemis solitariis breviter pedunculatis e lateribus spatharum emergentibus, spiculis valde heteromorphis, spiculis sessilibus a latere leviter compressis, gluma inferiore chartacea dorso convexa ecarinata, spiculis pedicellatis dorso compressis ad glumam inferiorem redactis differt (C. E. Hubbard, 1950).

New genus, akin to *Ischaemum* L., from which by the racemes solitary shortly pedunculate out from the sides of the spathes emerging, by the spicules strongly heteromorphic, with the sessile spicules at the side lightly compressed, the lower glume chartaceous on the back convex keelless, with the pedicelled spicules on the back compressed to the lower glume reduced it differs.

*Kohautia sennii* Bremekamp; inter species subgeneris *Pachystigmatis* seriei *Barbatarum* inflorescentia laxa et floribus parvis ad *K. effusam* (Oliver) Brem. accedens sed statura multo minore, pedicellis brevibus, corollae lobis majoribus ab ea recedens (Bremekamp, 1952).

Among species of the subgenus *Pachystigma* series *Barbatae* by its loose inflorescence and small flowers approaching *K. effusa* (Oliver) Brem. but diverging from this by its much lower stature, short pedicels, larger lobes of the corolla.

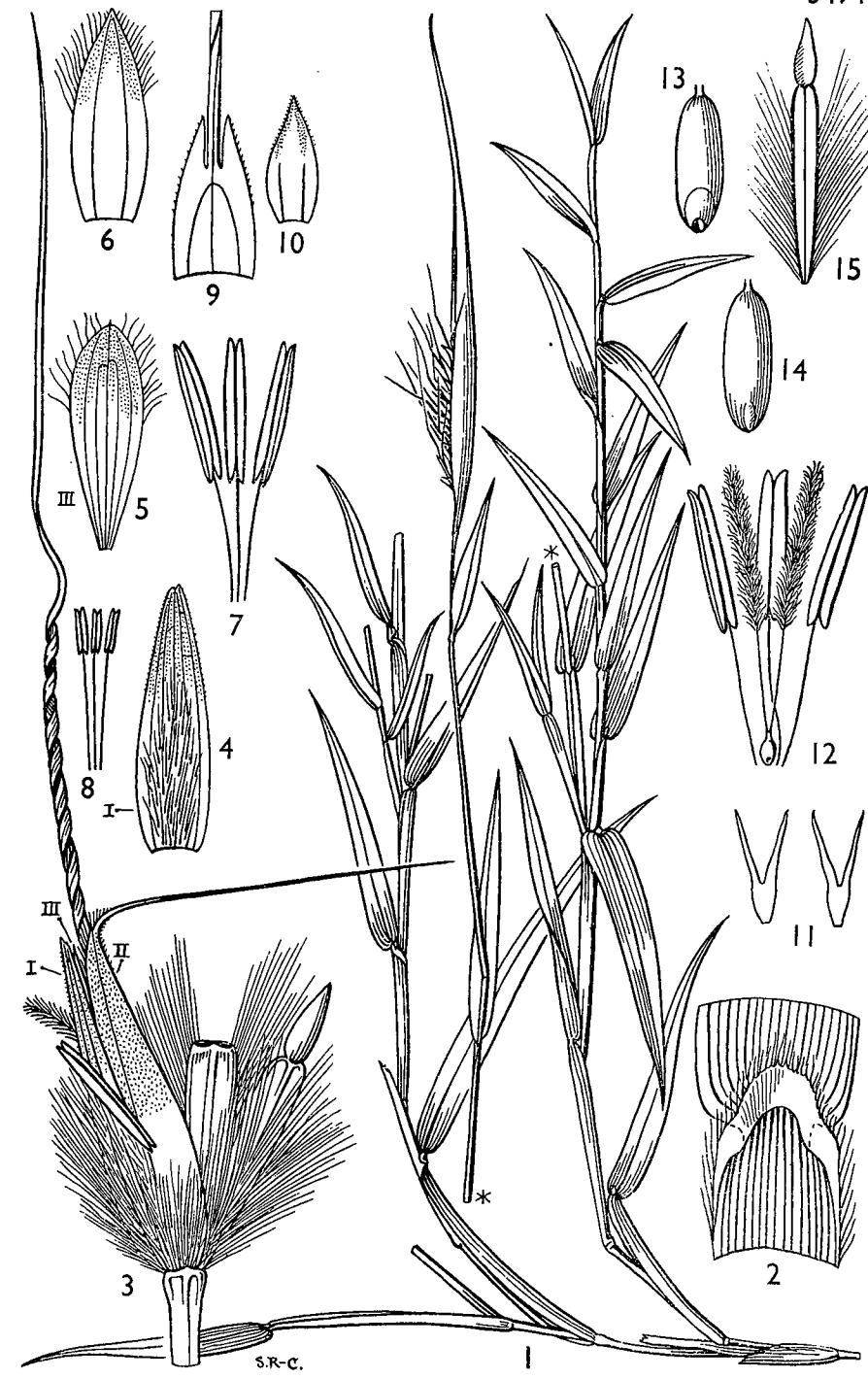
*Lecanora carpathica* A. Zahlbruckner; quoad habitum et fabricam internam apotheciorum ad *Lecanoram hageni* accedit, sed ab ea differt essentialiter thallo validiore, soralibus obsito, KOH flavescente, praeterea ab ea distat apothecis minoribus et angustioribus, sporis minoribus et hymenio I persistenter violaceo-coeruleo tincto (Zahlbruckner, 1914).

As to habit and the internal structure of the apothecia it approaches *Lecanora hageni*, but it differs essentially from this by the more robust thallus, covered by soralia, turning yellow with KOH, moreover it stands apart from this by its smaller and narrower apothecia, its smaller spores and its hymenium with I persistently violet-blue coloured.

*Limonium mouretii* (Pitard) Maire; species maroccana ab aliis speciebus Africæ septentrionalis pariter foliis margine sinuatis et caulis angulatis vel alatis gaudentibus propter folia caulesque glabra, pedunculos spicarum angulatos (nec alatos apicibus alarum in appendices triangulares abeuntibus),

Fig. 9 *Kerriochloa siamensis* C. E. Hubbard

1, planta florens, pars; 2, ligula; 3, rhachidis internodium spiculis sessilibus et pedunculatis; 4, gluma inferior spiculae sessilis; 5, lemma anthoecii inferioris; 6, palea; 7, 8, stamna; 9, lemma anthoecii superioris; 10, palea; 11, lodiculae; 12, 13, 14, caryopsis; 15, spicula pedicellata (by Stella Ross-Craig, from Hooker's *Icones Plantarum*, 35; 1950)



bractea superiorem apice haud spinosam, calycem anguste infundibuliformem bene distincta (Stearn, 1940).

Moroccan species from other species of north Africa in like manner furnished with (rejoicing in) leaves sinuate at the margin and angled or winged stems quite distinct on account of its glabrous leaves and stems, angled peduncles of the spikes (not winged with the tips of the wings ending in triangular appendages), upper bract at the tip not spinous, narrowly funnel-shaped calyx.

*Lindsaea coriifolia* Lindman; species habitu cum *Lindsaea schomburgkii* Klotzsch optime congruens, sed differt segmentis crassioribus, coriaceis longius distantibus, venuis subduplo crebrioribus (Lindman, 1903).

Species in habit with *Lindsaea schomburgkii* Klotzsch best agreeing but it differs in its thicker coriaceous more widely spaced segments with the venules nearly twice as crowded.

*Malva colmeiroi* Willkomm; haec species in Lusitania septentrionali et in Gallaecia copiosissima ab affinibus *M. moschata* et *M. tournefortiana* carpellis praecclare distinguitur glabris (aliquando in dorso vix puberulis), maturitate nigrescentibus, lateribus parum radiato-rugulosis, quae in *M. moschata* hirsutissima, demum aterrima, lateribus conspicue radiato-rugosis et in *M. tournefortiana* hirsuta sed etiam maturitate pallida et aliquantulo minora sunt (Lacaia, 1930).

This species most plentiful in northern Portugal and in Galicia from the allied *M. moschata* and *M. tournefortiana* is very clearly distinguished by the glabrous carpels (now and then on the back only just puberulous) at maturity blackish, with the sides not particularly radiate-rugose, which in *M. moschata* are most hirsute at length quite black, with the sides conspicuously radiate-rugose and in *M. tournefortiana* hirsute but even at maturity pale and somewhat smaller.

*Psychotria farameoides* Bremekamp; a speciebus quas Mueller Argovensis ad *Eu-psychotriae* species *Bracteosae* ascripsit combinatione florum subcapitatorum cum foliis basi rotundatis et vix notabile petiolatis distinguenda, a *Ps. bracteata* DC. quam Mueller Argovensis ad *Inundatae* adnumeravit forma bractearum lineari-lanceolata et foliis minoribus, pro rata angustoribus, basi rotundatis et brevius petiolatis diversa (Bremekamp, 1962).

From the species which Müller of Aargau ascribed to *Eu-psychotria Bracteosae* to be distinguished by the combination of almost capitate flowers with leaves rounded at base and not notably petiolate, from *Ps. bracteata* DC. which Müller attributed to the *Inundatae* distinct by the linear-lanceolate shape of the bracts and the smaller relatively narrower leaves at base rounded and more shortly petiolate.

*Psychotria laurifolia* Swartz; differt a *P. glabrata* foliis longioribus crassiusculis, floribus majoribus, baccis subrotundis (Swartz, 1797).

It differs from *P. glabrata* by its longer somewhat thick leaves, its larger flowers, its almost rotund berries.

*Psalliota purpurella* F. H. Möller; differt a *P. semota* statura minore, lamellis latioribus et colore pilei omnino purpureo (Möller, 1951).

It differs from *P. semota* by its smaller stature, broader gills and the completely purple colour of the pileus.

*Reaumuria trigyna* Maximowicz; quam *R. songarica* m. omnibus partibus multo major et flores non sessiles, ceterum habitu similior quam *R. persicae* Boiss., cui ex characteribus diagnosticis proxima, quae tamen foliis dense fasciculatis ovatis, flore duplo majore filamentisque basi crenatodentatis, praeter alia signa abhorret (Maximowicz, 1881).

Than my *R. songarica* in all parts much bigger and flowers not sessile, otherwise more like [this] in habit than *R. persicae* Boiss., to which according to the diagnostic characters [it is] close, [but] which nevertheless differs by [having] the leaves densely fasciculate ovate, the flower twice as big and the filaments at base crenate-dentate apart from other features.

*Sabal jamaicensis* Beccari; *S. parviflorae* affinis, a qua imprimis differt ramulis floriferis brevioribus, fructiferis in medio paullo incrassatis et segmentorum laciniis in apicem tenuissimum filiformem productis (Beccari, 1908).

Allied to *S. parviflora*, from which it differs particularly by the shorter flowering branchlets, the fruiting ones at the middle a little thickened and the laciniæ of the segments drawn out into a very slender thread-like apex.

*Saxifraga geoides* Lacaia; species nova *S. geo* proxima, cuius flores foliorumque texturam, indumentum et colorem habet. Differt vero statura minore, vix ultra 10 cm., foliorum basi non vel vix cordata, saepe cuneiformi, petiolo breviore (2-3 cm.) latiovere (1.5 mm.), lamina minima, parum longiore (1-1.5 cm.) quam lata, marginis crenaturis paucissimis (6-8) et minus regulariter dispositis (Lacaia, 1930).

New species nearest to *S. geum*, of which it has the flowers and the texture, indumentum and colour of the leaves. It differs in fact by its lower stature, scarcely above 10 cm., by the base of the leaves not or scarcely cordate often cuneiform, by its shorter (2-3 cm.) and broader (1.5 mm.) petiole, very small blade little longer (1-1.5 cm.) than broad, with the crenate teeth of the margin very few (6-8) and less regularly arranged.

*Senecio sagitta* Maximowicz; ex affinitate *S. cacaliaefolii* Schultz Bip. et *S. emodensis* Schultz Bip., ab utroque foliorum forma et venatione distinctus (Maximowicz, 1881).

Of the affinity of *S. cacaliaefolius* Schultz Bip. and *S. emodensis* Schultz Bip., distinct from both by the form and veining of the leaves.

*Trichostomum obtusifolium* Brotherus; species foliis obtusissimis a congeneribus diversa (Brotherus, 1922).

Species by its very blunt leaves different from other members of the genus.

*Viburnum × bodnantense* Aberconway; *hybrida hortensis* et *Viburno fragrante* Bunge et *V. grandifloro* Wallich exorta, magnitudine floris (tubo corollae c. 9 mm. longo) inter parentes media, ad illud habitu et perulis interioribus subglabris, ad hoc foliis plerumque magnis et pedunculo pubescenti accedens (Stearn, 1950).

Garden hybrid originated from *Viburnum fragrans* Bunge and *V. grandiflorum* Wallich, by the size of the flower (with the tube of the corolla about 9 mm. long) midway between the parents, coming near to the former by its habit and almost glabrous inner perules, to the latter by its usually large leaves and pubescent peduncle.

*Viburnum × hillieri* Stearn; *hybrida hortensis* et *Viburno erubescente* DC. et *V. henryi* Hemsley genita, foliis sempervirentibus ad 6 cm. latis, tubo corollae 4-5 mm. longo et aliis characteribus inter parentes media (Stearn, 1956).

Garden hybrid born from *Viburnum erubescens* DC. and *V. henryi* Hemsley, by the evergreen leaves to 6 cm. broad, by the tube of the corolla 4-5 mm. long and by other characteristics midway between the parents.

*Viola grandisepala* W. Becker; ex affinitate *V. smithiana* W. Becker et specierum affinum sepalis late ovatis conspicuis distinguenda (W. Becker, 1928).

From the alliance of *V. smithiana* and related species to be distinguished by its conspicuous broadly ovate sepals.

## CHAPTER XIV

### Descriptions

Sequence and order in descriptions, p. 155—Sample descriptions, p. 157—Algae, p. 157—Cyanophyta, p. 157—Chrysophyta, p. 158—Chlorophyta, p. 162—Charophyta, p. 163—Phaeophyta, p. 164—Rhodophyta, p. 165—Fungi, p. 168—Ascomycetes, p. 168—Basidiomycetes, p. 169—Myxomycetes, p. 173—Fungi Imperfici, p. 173—Lichenes, p. 175—Bryophyta, p. 178—Pteridophyta, p. 183—Gymnospermae, p. 186—Angiospermae, p. 186—Dicotyledones, p. 186—Monocotyledones, p. 192.

Descriptions necessarily vary in length, detail and style according to the purpose for which they are intended and the nature of the organisms concerned; but a complete description, as defined by John Lindley, in which there would be 'a full statement made of all the peculiarities of every part, however obscure or difficult to observe', is rarely needed. A description should, however, state the habit of the plant and the shape and other obvious characters of all its main organs, usually omitting those common to the whole family or genus, when the classification is a well-established one, and give special attention to those characters which separate closely allied species in the group. For many groups there now exists a standard sequence in which organs and their attributes are recorded. With flowering plants it is customary, in accordance with the Linnaean rule 'Descriptio ordinem nascendi sequatur . . . Praestat naturam sequi a Radice ad Caulem, Petiolos, Pedunculos, Flores' (*Philosophia botanica*, no. 328; 1751), to proceed upwards from the root to the flowers and fruit and from the outside inwards.

The order of recording attributes is based on the general principles enunciated by Alphonse de Candolle: 'Pass from the known to the unknown, from definite matters to indefinite ones, from those which are most apparent to those which are less so.' For an individual organ, e.g. a simple leaf, this means stating position and number, general shape or outline, apex, margin, base, length, breadth, pubescence, veining, texture, colour. It is usual to describe the blade of a leaf before the petiole and stipules; the filaments of stamens before the anthers and pollen; the ovary of a pistil before the style and stigma. A set order enables descriptions to be readily compared. When describing a new species, the best policy is to adopt the same

sequence and terminology of organs and their attributes as in some standard revision of the group. When preparing a monograph, a good beginning may be made by first describing two of the most diverse species and two of the most closely allied and then, from comparison of these descriptions, drafting a guiding scheme which can serve as a model for all descriptions. All information will then be presented in the same order; a difference in wording should indicate a difference in the plants concerned, similarity in wording a lack of significant difference.

Very long descriptions bury the most commonly needed information in a mass of detail. Hence a description of a new genus or species should be accompanied by a statement supporting its publication by emphasizing the most significant differences from its allies (see Chapter XIII) and placing it systematically. Some authors italicize or letter-space special features within the description.

Below are descriptions by a diversity of authors referring to diverse groups within the plant kingdom. Some of them may serve as models, others will suggest methods. Preference has been given to modern authors because they often take into consideration various characters ignored by or unknown to earlier authors of repute. The description of new plants in Latin is an act of international co-operation obligatory under the *International Code of botanical Nomenclature*. But it is not easy, and in some groups, notably the Algae (cf. Lund, 1953),<sup>1</sup> may be found very difficult. Hence there is a strong temptation to entrust the translation into Latin of the description of a new taxon to some willing person who may not understand properly the author's intent and may be unfamiliar with the customary terminology of the group (see the Preface to this book!). Professors of the classics are particularly liable to err through ignorance of botanical tradition. No descriptions should be written without study of previous descriptions referring to the same kind of plants. For descriptions in Latin of families and genera Bentham and Hooker's *Genera Plantarum* (1862-83) provides excellent models. For other groups, reference should be made to works by the masters of phytography listed on pp. 9, 12. Whenever possible, therefore, a Latin description should be accompanied by a description in the author's own language and an illustration as a defence against ambiguity and misinterpretation.

The English versions, being intended to illustrate the arrangement and style of the Latin descriptions, follow the latter fairly literally and would sometimes have been differently worded if intended to stand by themselves.

<sup>1</sup> J. W. G. Lund, 'Article 44 of the International Code in relation to Algae', *Taxon*, 2: 17-19 (1953).

## ALGAE

### CYANOPHYTA

#### *Anabaenopsis magna* J. H. Evans (Nostocaceae)

*Trichomata* libere natantia, brevia vel longa, circinata anfractibus uno ad octo, constricta ad septa, 10-11  $\mu$  lata. *Cellulae* cylindraceae, 8-12  $\mu$  longae, bullis nullis, protoplasmate subtiliter granulari. *Heterocystae* terminales vel geminatae intercalaresque, fere sphaericae vel ellipsoideae, 16  $\times$  13  $\mu$ , poris uno vel duobus parvis munitae. *Sporae* (akinetes) geminatae intercalares, ab heterocystis remotae, inflato-cylindraceae, 10-11  $\mu$  longae, 11  $\mu$  latae, protoplasmate fusco denso granulari (Adapted from J. H. Evans in *Hydrobiologia*, 20: 82; 1962).

*Trichomes* free-floating, short or long, coiled with 1 to 8 spirals, constricted at cross-walls, 10-11  $\mu$  broad. *Cells* cylindric, 8-12  $\mu$  long, with no bubbles (gas vacuoles), with the protoplasm very finely granular. *Heterocysts* terminal or paired and intercalary, almost spherical to ellipsoid, 16  $\times$  13  $\mu$ , with one or two small pores. *Spores* (akinetes) paired and intercalary, away from the heterocysts, inflated cylindrical, 10-11  $\mu$  long, 11  $\mu$  broad, with the protoplasm dark dense granular.

#### *Microcoleus vaginatus* Gomont (Oscillatoriaceae)

*Fila* sparsim repentina, rarius in stratum nigrum et nitens intricata, tortuosa, haud raro confuse pseudo-ramosa. *Vaginae* cylindraceae, ambitu plus minusve inaequales, agglutinantes, apice acuminatae et clausae, aut apertae et evanescentes, interdum omnino diffluentes, chlorozincico iodurato non caerulescentes. *Trichomata* aeruginosa intra vaginam permulta, arcte congesta, plerumque funiformi-contorta, extra vaginam recta, ad genicula haud constricta, apice sublonge attenuata et capitata, 3.5  $\mu$  ad 7  $\mu$  crassa; articuli subquadrati, vel diametro trichomatis ad duplo breviores, rarius ad duplo longiores, 3  $\mu$  ad 7  $\mu$  longi; dissepimenta frequenter granulata; membrana cellulae apicalis superne in calyptram depresso-conicam incrassata (M. Gomont, *Mon. Oscillar.*, 94; 1892).

*Filaments* sparsely creeping, more rarely entangled into a black and glossy layer, tortuous, not rarely confusedly pseudo-branched. *Sheaths* cylindric, in outline more or less unequal, glued together, at the apex acuminate and closed, or open and passing away, sometimes entirely dissolving, not turned blue by chlorozinc-iodine. *Trichomes* verdigris, within the sheath very many, tightly congested, commonly twisted like rope, outside the sheath straight, not constricted at the nodes, at the tip somewhat long attenuate and capitate, 3.5  $\mu$  to 7  $\mu$  thick; articuli almost quadrate, or up to twice shorter than the diameter of the trichome, more rarely to twice longer, 3  $\mu$  to 7  $\mu$  long; end walls frequently granulate; membrane of the apical cell upwards thickened into a depressed-conical calyptra.

## CHYSOPHYTA

## Amphiprora subcostata Hustedt (Amphiproraceae)

*Membrana* frustulorum delicata. *Frustulum* in facie connectivali visum in medio profunde constrictum, 54  $\mu$  longum, in medio 8  $\mu$ , prope apices 17  $\mu$  latae; alae ad 7  $\mu$  altae. *Linea alarum basalis* convexa non sinuata, irregularis. *Structura membranae* tenuissima, striis transapicalibus inconspicuis. *Alae costis* transapicalibus circiter 6 in 10  $\mu$ , ad marginem versus plerumque furcatis, prope polos saepe anastomosantibus. *Forma valvarum* incognita verisimile lanceolata; superficies valvarum medio valde inflata (F. Hustedt in *Veröff. Inst. Meeresf. Bremerhaven*, 6: 77; 1959).

Membrane of frustules delicate. Frustule in girdle view at the middle deeply constricted, 54  $\mu$  long, in the middle 8  $\mu$  broad, near the ends 17  $\mu$  broad; wings to 7  $\mu$  high. Base line of the wings convex not sinuate, irregular. Structure of the membrane extremely thin, with transapical striae inconspicuous. Wings with transapical costae about 6 in 10  $\mu$ , towards the margin mostly forked, near the poles often anastomosing. Shape of the valves unknown very probably lanceolate; surface of the valves at the middle strongly inflated.

## Asterolampra arrenii Kolbe (Astrolampraceae)

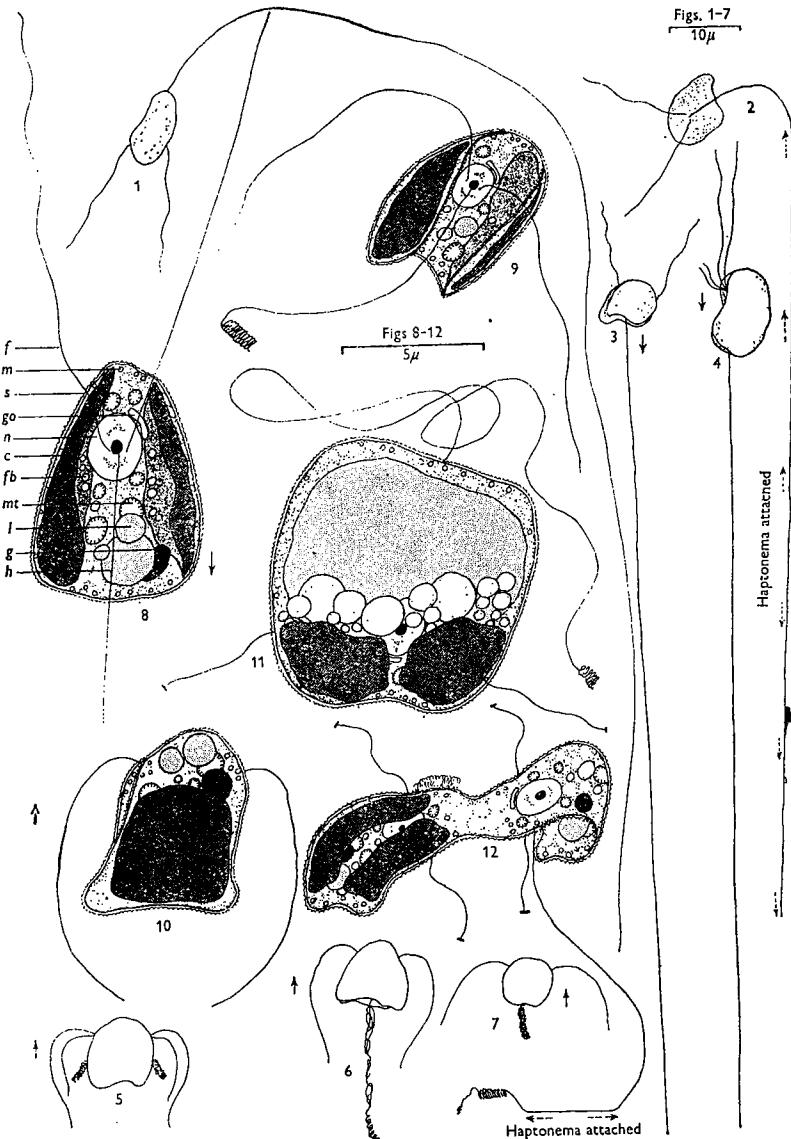
Valvae reniformes planae fragiles, 138-216  $\mu$  longae, 84-150  $\mu$  latae; area centralis circularis hyalina, radiis 8-14 rectis interdum bifurcati; compartimenta circiter  $\frac{1}{4}$  radii occupantes, centrum versus convexi vel truncati, areolis distinctis aequalibus 12 in 10  $\mu$ ; intervalla (vectores) 8-14 aequilata (circiter 3  $\mu$ ) leviter arcuato-curvata vel recta marginem non attingentes (R. W. Kolbe in *Rep. Swed. Deep-Sea Exp. 6, Sedim.*, 1: 47; 1954).

Valves reniform flat fragile, 138-216  $\mu$  long, 84-150  $\mu$  broad; central area circular hyaline, with 8-14 straight sometimes forked rays; sectors occupying about  $\frac{1}{4}$  of the radius, towards the centre convex or truncate, with distinct equal areoles 12 in 10  $\mu$ ; intervals (vectors) 8-14 of equal width (about 3  $\mu$ ) gently arcuate-curved or straight not reaching the margin.

## Chrysochromulina strobilus Parke &amp; Manton (Chrysophyceae)

Cellula in statu erratico satis metabola, depressa, dorso convexo, ventre plano vel cavo; dum quieta lenteve prolabilis ephippioides seu a dorso vel

Fig. 10 *Chrysochromulina strobilus* Parke & Manton  
 1, cellula apice tumido tantum haptonematis flexi omnino extensi affixa; 2, cellula ephippioides affixa, flagello more heterodynamicō movente, haptonemate per magnam partem longitudinis affixo; 3, cellula ephippioides lente prolabilis, haptonemate a fronte corporis extende; 4, cellula in statu primo fissionis lente rotans et movens, haptonemate a fronte corporis omnino extenso; 5, cellula in statu fissionis, flagellis quattuor et haptonematibus duobus ad satis celeriter natandum aptis; 6, individuum natans, flagellis pro specie typicis ad celeriter movendum aptis, haptonemate extenso sed in se circinato et post corpus se trahens; 7, individuum prolabilis sine rotatione, flagellis ad motum prolapsionis aptis; 8, cellula deltoides (a ventre visa) lente movens, haptonemate a fronte corporis omnino extenso, flagello altero lente undulanti, altero rigido vel lente vibranti; c, chromatophorum globulos saturatos lipidos a 'Sudan Black' tintos continens, f, flagellum, fb, globuli



lipidi, g, graphitum, gb, area Golgii, H, haptonema, I, vesicula leucosinea, m, corpus muciferum, mt, mitochondrium, n, nucleus, s, squama cupuliformis; 9, cellula affixa, haptonemate partim circinato et flagello a corpore extenso; 10, individuum natans, flagellis et corpore in statu ad rapide natandum pro specie typico; 11, cellula (e cultura in lumine fortis per 10 dies culta) globulos lipidos multos continens, haptonemate paene omnino extenso in se circinato et apice tantum affixo; 12, status fissionis serus; cellula filialis absque chromatophoris (from J. Marine Biol. Assoc. United Kingdom, 38; 1959)

ventre visa truncato-ovata; dum cito natans campanuliformis seu obovata seu depresso globularis; 6-10 (raro 5-12)  $\mu$  longa. *Flagella* duo *haptonema*que unicum in facie ventrali sat conferte inserta, plerumque mediana, tertia cellulae longitudinis parte ab apice rotundato remota; flagella paene vel plane aequalia, tenuissima, glabra, ad apices attenuata, nodulo quidque terminatum (per microscopium electronicum viso), cellula 2-3 plo longiora, inter motum citum homodynamica, inter lente movendum ut inter quietem heterodynamica visa; *haptonema* flagellis dimidio tenuius, extensum cellula 12-18 (raro -20) plo longius, apice incrassatum, in sectione transversa tres membranas tubiformes concentricas ostendens fibras 6 in orbem dispositas induentes, in tota longitudine adhaerendi potens. *Periplastus* pecticus, squamis dense angulata congestis, 0.15-0.2  $\mu$  diametro, marginibus adscendentibus, discis intus mucronato-incrassatis obtectus, alteris illis suppositis delicatulis, hyalinis, orbicularibus vel ovalibus, 0.3-0.4  $\mu$  diametro, costis radiantibus ornatis.

*Nucleus* unicus; stigma nullum. *Chromatophora* 2 vel 4, interdum unum vel nullum, fulva, in facie externa striatula, inter statum erraticum cellulae parietalia, catilliformia vel oblonga, pyrenoidibus externis carentia, sed regione penaria interna manifesta quidque instructum; inter statum sedentarium pallide aurea, subtilissime lobata. *Synthemata* lipoida et leucosinea. *Corpora mucifera* ejectilia parva, in strato externo cytoplasmatis distributa, in facie dorsali et ventrali posterioris partis ephippii crebriora, inter metabolismum situs mutantia.

*Propagatio vegetativa* in statu erratico bifissione effecta, cellulis filialibus plerumque aequalibus; in statu sedentario fissione iterata cellulae amoeboidis, cellulis filialibus 4, ovatis, parietibus subtilibus indutis, quaque earum cellulam erraticam per porum liberante.

Typus die 9. Maji 1950 in summo mari lat. bor. 49° 21', long. occ. 04° 54' lectus, in Plymouth Angliae sub numero 43 cultus, postea in vivario Cantabrigensi depositus (M. Parke & I. Manton in *J. Marine Biol. Ass. U.K.*, 38: 172; 1959).

Cell in a motile state considerably metabolic, depressed, with the dorsal side convex, with the ventral side flat or concave; when at rest or slowly gliding forward saddle-shaped or seen from the dorsal or ventral side truncate-ovate; when rapidly swimming bell-shaped or obovate or depressed-globose; 6-10 (rarely 5-12)  $\mu$  long. Two *flagella* and one *haptonema* on the ventral surface fairly closely inserted, usually central, distant one third part of the length of cell from the rounded apex; flagella almost or quite equal, very fine, glabrous, drawn out to the apices, each one terminated by a small knob (seen by means of the electron microscope), 2-3 times longer than the cell, during rapid motion appearing homodynamic, during slow movement as also when at rest heterodynamic; *haptonema* half as thin as the flagella, when extended 12-18 (rarely -20) times longer than the cell, at the apex thickened, in transverse section displaying three tube-shaped concentric membranes surrounding 6 fibres arranged in a ring, along its whole length capable of clinging. *Periplast* pectic, covered with densely angularly crowded scales 0.15-0.2  $\mu$  in diameter with ascending margins and discs on the inside

mucronately thickened, with beneath them placed others [which are] delicate transparent orbicular or oval 0.3-0.4  $\mu$  in diameter ornamented by radiating ribs.

*Nucleus* one; stigma nil. *Chromatophores* 2 or 4, occasionally one or more, tawny, on the outer face faintly striated, during the motile state of the cell parietal, saucer-shaped or oblong, lacking external pyrenoids, but each one provided with an evident internal storage region; during non-motile state pale gold, very finely lobed. *Synthemata* with lipids and leucosin. Ejectile *muciferous bodies* small, distributed in the outer layer of cytoplasm, on the dorsal and ventral surface of the back of the saddle more numerous, during metaboly changing position.

*Vegetative propagation* in the motile state effected by fission into two, with the daughter cells usually equal; in the non-motile state by repeated fission of amoeboid cell, with 4 ovate daughter cells provided with delicate walls, every one of these liberating the motile cell through a pore.

Type collected on 9 May 1950 at the surface of the sea in lat. 49° 21' N., long. 04° 54' W., cultured in Plymouth, England under no. 43, later deposited in the Cambridge living collection.

#### *Chrysosphaerella rodhei* Skuja (Chrysosphaerellaceae)

*Coloniae*  $\pm$  globosae, saepe paululum tetraëdricae vel ellipsoideae, interdum leviter irregulares, plerumque cellulis 4-32 compositae, 20-45  $\mu$  diametentes, sine tegumento mucoso; cellulis obovatis vel obovoido-piriformibus, 12-19  $\mu$  longis, 7-12  $\mu$  latis; flagellis binis valde inaequalibus: flagello generali cellulae longitudine 1½-2½-plo longiore, flagello altero brevissimo solum  $\frac{1}{8}$ - $\frac{1}{10}$  cellulae longitudinis. *Periplastus* sat firmus incoloratus in parte anteriori squamis silicosis ellipticis, 3.5-3.8  $\mu$   $\times$  1.5-2  $\mu$  magn., spinisque 1-4-8 vel ultra munitus; spinis rectis acutis a basi apicem versus gradatim attenuatis, 6-26  $\mu$  longis, inferne ad 0.9  $\mu$  crassis, disco duplicito pedali 3-3.5  $\mu$  lato, 1.5-3  $\mu$  alto praeditis. *Chromatophora* bina, lateralia, brunneo-luteo-viridia, alveiformia, stigmate uno (raro bina) ovali, fusco-rubro ad marginem anteriorem. *Vacuola contractilia* binis ad basin flagellarum, gutta magna leucosini in parte posteriore cellulae; praeterea granulis minutis in cytoplasmate hyalino sparsis, nucleo nucleolato centrali. *Cystae* globosae, 13-15  $\mu$  diam., membrana hyalina vel pallidissime brunnea, levi, poro 2.5-3  $\mu$  lato praeditae) H. Skuja in *Symb. Bot. Upsal.*, 9, no. 3: 276; 1948).

*Colonies* more or less globose, often somewhat tetrahedric or ellipsoid, sometimes slightly irregular, usually composed of 4-32 cells 20-45  $\mu$  in diameter without a mucous tegument; with cells obovate or ovoid-pear-shaped, 12-19  $\mu$  long, 7-12  $\mu$  broad; with two flagella exceedingly unequal; with the principal flagellum 1½-2½ times longer than the length of the cell, the other flagellum very short, only  $\frac{1}{8}$ - $\frac{1}{10}$  the length of the cell. *Periplast* moderately firm colourless in the anterior part protected by elliptic siliceous scales 3.5-3.8  $\mu$   $\times$  1.5-2  $\mu$  in size and 1-4-8 or more spines; with spines straight acute from the base to the apex gradually attenuate, 6-26  $\mu$  long, below to 0.9  $\mu$  thick, provided with a double foot-like disc 3-3.5  $\mu$  broad,

1·5-3  $\mu$  high. *Chromatophores* two, lateral, brown-yellow-green, trough-shaped with the eye-spot one (rarely two) oval, brownish red at the anterior margin. *Contractile vacuoles* two at the base of the flagella, with a large drop of leucosin in the posterior part of the cell; moreover with minute granules scattered in the hyaline cytoplasm, with a central nucleolate nucleus. *Cysts* globose, 13-15  $\mu$  in diameter, with the membrane hyaline or very pale brown, smooth, provided with a pore 2·5-3  $\mu$  broad.

*Eunotia taeniata* Hustedt (Eunotiaceae)

*Valvae* margine ventrali leniter concava, margine dorsali convexa 4-9 undulata, apicibus obtuse rotundatis, 30-55  $\mu$  longae, 6-10  $\mu$  latae. *Rhaphai* (rhaphes) breves in limbo valvorum prope polos sitae, apices terminales earum in facie valvarum non surrectae. *Striae transapicales* 12-20 in 10  $\mu$ , in apicibus densiores, usque ad circiter 24 in 10  $\mu$ . *Costa longitudinalis* fasciam hyalinam modice latam juxta marginem ventrale formans (F. Hustedt in *Bot. Notiser*, 1952: 380; 1952).

*Valves* with the ventral margin slightly concave, the dorsal margin convex with 4-9 undulations, the ends obtusely rounded, 30-55  $\mu$  long, 6-10  $\mu$  broad. *Raphes* short situated on the mantle of the valves near the poles, the terminal ends of these not produced on the surface of the valves. *Transapical striae* 12-20 in 10  $\mu$ , at the ends denser, up to about 24 in 10  $\mu$ . *Longitudinal rib* (pseudoraphe) forming a hyaline fairly broad band close to the ventral margin.

## CHLOROPHYTA

*Codium duthieae* Silva (Codiaceae)

*Thallus* erectus ad 60 cm. alt., dichotome ramosus; rami omnino teretes, solum ad dichotomias aut fere omnino complanati; interdichotomiae 3-14 mm., dichotomiae ad 40 mm. lat. *Utriculi cylindrici* ad clavati, (130-) 175-500 (-720)  $\mu$  diam. (45-) 670-1800  $\mu$  long., apicibus late rotundatis; membrana utricularis 2-6  $\mu$  crass., ad apices (ad 42  $\mu$ ) interdum incrassata. *Pili* (aut pilorum cicatrices) parci, interdum satis multi (ad 12 per utriculum), 185-430  $\mu$  infra apicem portati. *Filamenta medullaria* plerumque 43-72  $\mu$  diam. *Gametangia* lanceo-ovata, 70-160  $\mu$  diam. (235-) 270-430  $\mu$  long., aliquot (ad 8) per utriculum, omnia in pediculis c. 15  $\mu$  long. in protuberantia 345-675  $\mu$  infra apicem portata (P. C. Silva in *Austral. J. Bot.*, 4: 275; 1956).

*Thallus* erect, to 60 cm. high, dichotomously branched; branches wholly terete, flattened only at the dichotomies, or flattened almost throughout; interdichotomies 3-14 mm. broad, dichotomies to 40 mm. broad. *Utricles* cylindrical to clavate, (130-) 175-500 (-720)  $\mu$  diam., (45-) 670-1800  $\mu$  long, with apices broadly rounded; utricular wall 2-6  $\mu$  thick, at apices occasionally thickened (to 42  $\mu$ ). *Hairs* (or hair scars) occasional, at times fairly numerous (to 12 per utricle), borne 185-430  $\mu$  below apex. *Medullary filaments* mostly 43-72  $\mu$  diam. *Gametangia* lance-ovoid, 70-160  $\mu$  diam., (235)-270-430  $\mu$  long,

several (to 8) per utricle, all borne on pedicels about 15  $\mu$  long on protuberances 345-675  $\mu$  below apex.

*Cosmarium planogranatum* Croasdale (Desmidiaceae)

*Cellulae* 24-30  $\mu$   $\times$  22-26  $\mu$ , 8-10  $\mu$  latae isthmo, 13-16  $\mu$  crassae. *Semicellulae* elliptico-reniformes; sinus inapertus; margines plerumque crenis 14 uniformibus planis praediti; superficies granula 25-35 magna plana, 12 in circulo intramarginali, aliis in tribus ordinibus irregularibus horizontalibus dispositis, praebens; membrana alibi laevis; semicellulae a latere visae circulares, granulis in quattuor ordinibus horizontalibus dispositis, a vertice visae late ovatae sine protuberantia mediana, granulis in duobus ordinibus intramarginalibus dispositis, parte mediana laevis; chloroplastus monocentricus (H. T. Croasdale in *Trans. Amer. Microsc. Soc.*, 81: 29; 1962).

*Cells* 24-30  $\mu$   $\times$  22-26  $\mu$ , 8-10  $\mu$  broad at the isthmus, 13-16  $\mu$  thick. *Semicells* elliptic-reniform; sinus closed; margins commonly provided with 14 uniform flat crenae; surface with 25-35 large flat granules, with 12 arranged in an intramarginal circle, the others in three irregular horizontal rows; membrane otherwise smooth; semicells in side view circular, with granules arranged in four horizontal rows, in vertical view broadly ovate without a median protuberance, with granules arranged in two intramarginal rows, with the median part smooth; chloroplast monocentric.

*Enteromorpha jugoslavica* Bliding (Ulvaceae)

*Planta fertilis* ca. 10-20 cm. alta, diam. 0·1-0·3 cm., inferne ramis paucis simplicibus angustissimis. *Cellulae* series distinctas longitudinales et nonnumquam transversales formantes, a facie visae quadratae, ca. 10  $\mu$   $\times$  10  $\mu$ , aut rectangulares 11·0-12·7  $\mu$  longae, 8·2-9·0  $\mu$  latae, in infima parte caulis ca. 16  $\mu$   $\times$  12  $\mu$ , rotundatae, subordinatae. *Pyrenoides* cellulae 1-3 (-4). *Generations* alternantes: iso-gameta generationis sexualis minutissima, ca. 4·9  $\mu$  longa, 2·6  $\mu$  lata; zoospores generationis asexualis 4-ciliatae, ca. 9·2  $\mu$   $\times$  5·1  $\mu$  (C. Bliding in *Bot. Notiser*, 113: 172; 1960).

*Fertile plant* about 10-20 cm. high, 0·1-0·3 cm. in diameter, below with branches few simple very narrow. *Cells* forming distinct longitudinal and sometimes transverse series, in surface view square, about 10  $\mu$   $\times$  10  $\mu$ , or rectangular 11·0-12·7  $\mu$  long, 8·2-9·0  $\mu$  broad, in the lowest part of the stem about 16  $\mu$   $\times$  12  $\mu$ , rounded, not well ordered. *Pyrenoids* of the cell 1-3 (-4). *Generations* alternating: isogametes of the sexual generation extremely minute, about 4·9  $\mu$  long, 2·6  $\mu$  broad; zoospores of the asexual generation 4-ciliate, about 9·2  $\mu$   $\times$  5·1  $\mu$ .

## CHAROPHYTA

*Nitella moniliformis* Zanевeld (Characeae)

*Planta* monoica, gracilis, humilis, moniliformis, brunneo-viridis, ad 15 cm. alta. *Caulis* tenuis, 150-300  $\mu$  in diam. *Internodia* quam ramuli 1-2-plo

longiora. *Verticillorum ramuli* steriles fertilibus similes, capita formantes, c. 0.7 cm. diam., plerumque 4-, interdum 3- ad 5-furcati, 0.5 cm. longi; radii primarii 6-7, longitudine  $\frac{1}{2}$  totius ramuli; radii secundarii 5-6; radii tertiarri 5-6; radii quaternarii 4-5; radii quintarii (dactyli) 3-5. *Dactyli* plerumque 3-5, plus minusve aequales, bicellulati; cellula inferior 250-530  $\mu$  longa, 35-55  $\mu$  lata, cylindrica, apice rotundata; cellula superior acuminata, 35-70  $\mu$  longa, basi 8-17  $\mu$  lata. ♂ et ♀ *gametangia* ad omnes furcationes posita, haud muco circumfusa. *Antheridia* solitaria, terminalia, c. 180  $\mu$  diam. *Oogonia* 1-3 aggregata, ad nodos liberos posita, 240-270  $\mu$  longa (coronula inclusa), 204-235  $\mu$  lata, striis (5-6); *coronula* persists, connivens, 50-60  $\mu$  alta, basi 65-90  $\mu$  lata; *oosporae* aureo-brunneae, 180-225  $\mu$  longae, 155-195  $\mu$  latae, striis (4-5); *oosporae* membrana tuberculata (J. S. Zaneveld in *Blumea*, 4: 79; 1940).

Plant monoecious, slender, low, moniliform, brown-green, up to 15 cm. high. Stem slender, 150-300  $\mu$  in diam. Internodes 1-2 times as long as the branchlets. Sterile branchlets of the whorls similar to the fertile ones, forming heads of c. 0.7 cm. diam., frequently 4- sometimes 3- to 5-furcate, 0.5 cm. long; primary rays 6-7, half as long as the entire branchlet; secondary rays 5-6; tertiary rays 5-6; quaternary rays 4-5; quinary rays (dactyls) 3-5. Dactyls mostly 3-5, more or less equal, two-celled; basal cell 250-530  $\mu$  long, 35-55  $\mu$  wide, cylindrical, rounded at the apex; upper cell acuminate, 35-70  $\mu$  long, 8-17  $\mu$  wide at base. Male and female gametangia situate at all forks, not enveloped by mucus. Antheridia solitary, terminal, c. 180  $\mu$  in diam. Oogonia 1-3 together, situate at the free nodes, 240-270  $\mu$  long (including coronula), 204-235  $\mu$  wide, with (5-6) striae; coronula persistent, connivent, 50-60  $\mu$  high, 65-90  $\mu$  wide; oospores golden-brown, 180-225  $\mu$  long, 155-195  $\mu$  wide, at base with (4-5) striae; membrane of oospore tuberculate.

## PHAEOPHYTA

### *Lithoderma antarcticum* Skottsberg (Ectocarpaceae)

*Discus* minutus suborbicularis obscure fuscus, 180-210  $\mu$  crassus, crescentia marginali, substrato firme adhaerens, cellulis quadraticis-hexagonis-rectangularibus 4-10  $\mu$  longis et 4-7  $\mu$  latis, chromatophoris nonnullis donatis disciformibus. *Fila* verticalia arce congregata, e cellulis cubicis formata. *Sporangia* unilocularia terminalia cylindracea, ad 15-16 longa et 9-10  $\mu$  lata. Pili desunt (C. Skottsberg in *Arkiv f. Bot.* II., 2: 539; 1953).

*Disc* minute almost orbicular dull dark brown, 180-210  $\mu$  thick, with marginal growth, firmly clinging to the substratum, with quadrate to hexagonal to rectangular cells 4-10  $\mu$  long and 4-7  $\mu$  broad, containing several disc-shaped chromatophores. Erect filaments closely stuck together, formed from cubical cells. *Sporangia* unilocular terminal cylindric, to 15-16  $\mu$  long and 9-10  $\mu$  broad. Hairs lacking.

## RHODOPHYTA

### *Batrachospermum globosporum* Israelson (Batrachospermaceae)

*Frons* ad 7 cm. alta, ad 600  $\mu$  crassa, nunc laxe nunc abunde ramosa, valde mucosa, saturate viridis, leviter cyanescens. *Verticilli* aut distantes et ellipoidei, aut contigui et plus minus compressi. *Ramuli secundarii* longi, numerosi, mox totum internodium obtegentes. *Pili* numerosi, plus minus elongati. Monoica. *Ramuli carpogoniferi* e cellulis basalibus ramulorum primariorum orientes, breves, ad 7-cellulares, curvati; carpogonia ad 40  $\mu$  longa, trichogyno indistincte pedicellato, elongato-obconico vel raro obovato vel subcylindraceo. *Spermatangia* globosa, 5.5-6  $\mu$  longa, 5-6  $\mu$  lata, in apicibus ramulorum primariorum et secundariorum evoluta. *Gonimoblasti* singuli vel rarius duo, magni, in centro verticilli inserti, globosi vel semi-globosi, laxi; ramuli gonimoblasti ramulis primariis subsimiles, cellulae basales et subbasales cylindraceae, 2.5-5 plo longiores quam latae. *Carposporangia* globosa vel subglobosa, rarius obovata, ad 13 (15)  $\mu$  longa, ad 11  $\mu$  lata (G. Israelson in *Symb. Bot. Upsal.*, 6, no. 1: 44; 1942).

*Frond* up to 7 cm. high, to 600  $\mu$  thick, sometimes sparsely sometimes richly branched, strongly mucilaginous, deep green, lightly blue-tinged. *Whorls* either separated and ellipsoid or touching and more or less compressed. *Secondary branchlets* long, numerous, soon covering the whole internode. *Hairs* numerous, more or less elongated. Monoecious. *Carpogonial branches* arising from the basal cells of the primary branchlets, short, up to 7-celled, curved; carpogonia to 40  $\mu$  long, with the trichogyno indistinctly stalked elongated-obconical or rarely obovate or almost cylindrical. *Spermatangia* globular, 5.5-6  $\mu$  long, 5-6  $\mu$  broad, developed at the apices of the primary and secondary branchlets. *Gonimoblasts* single or more rarely two, large, inserted in the centre of the whorl, globular or semi-globular, loose; gonimoblast branchlets almost the same as the primary branchlets, the basal and almost basal cells cylindrical, 2.5-5 times longer than broad. *Carposporangia* globose or almost globose, more rarely obovate, to 13 (15)  $\mu$  long, to 11  $\mu$  broad.

### *Corallina goughensis* Y. M. Chamberlain (Corallinaceae)

*Planta* usque ad 4 cm. alta, frondibus numerosis erectis e crista basali ortis, per duos longitudinis trientes inferiores simplicibus intergeniculis teretibus, per trientem superiorem dichotome vel corymbose ramosis intergeniculis compressis. *Intergeniculorum cellulae* dispositae in strata horizontalia extremam partem versus deorsum curvata ita corticem formantia; cellulae medianae 35-70  $\mu$  longae, 6-8  $\mu$  latae, synapsibus lateribus bene evolutis. *Genicula unizonalia*; cellulae usque ad 250  $\mu$  longae. *Conceptacula tetrasporica* terminalia, in sinu inter ramos duos posita, poris apicalibus. *Tetrasporae* zonatim divisae, c. 160  $\mu$  longae, 60  $\mu$  latae (Y. M. Chamberlain in *Bull. Brit. Mus. (Nat. Hist.)*, Bot., 3: 213; 1965).

*Plant* up to 4 cm. high, with numerous erect fronds springing from a basal

crust, for the lower two thirds of [their] length unbranched with terete intergenicula, for the upper third dichotomously or corymbosely branched with compressed intergenicula. *Cells of intergenicula* arranged in horizontal rows towards the outermost part downwards curved to form a cortex; central cells 35-70  $\mu$  long, 6-8  $\mu$  broad, with lateral synapses well developed. *Genicula unizonal*; cells up to 250  $\mu$  long. *Tetrasporic conceptacles* terminal, placed in the angle between two branchlets, with pores apical. *Tetraspores* zonately divided, about 160  $\mu$  long, 60  $\mu$  broad.

**Liagora tetrasporifera Børgesen (Helminthocladiaeae)**

*Frons* caespitosa, ca. 7-8 cm. alta, filiformis, teres, 0.5-0.7 mm. crassa, dichotome divisa; crusta calcarea continua, superficie sublaevi obducta. Color frondis in specimine exsiccato roseo-albidus. *Stratum periphericum* ex filamentis dichotomis plus minus irregulariter evolutis formatum est; cellulae in parte basali subcylindrica, 5-8  $\mu$  latae, in media parte breviores et crassiores, ca. 8-10  $\mu$  latae, ad apicem versus breviores et minores ca. 3  $\mu$  latae. *Rami carpogonii* fere recti, ex tribus cellulis compositi, ca. 10  $\mu$  lati. *Cystocarpia* fere sphaerica ex filis non carposporiferis sed tetrasporangiferis constructa. *Antheridia* ad apices filorum assimilantium nascentur. Planta monoica est (F. Børgesen in *Danske Vid. Selsk. Biol. Meddel.*, VI, 6: 39; 1927).

*Frond* caespitose, about 7-8 cm. high, filiform, terete, 0.5-0.7 mm. thick, dichotomously divided; calcareous crust continuous, covered by an almost smooth surface. Colour of the frond in the dried specimen rosy-white. *Peripheral layer* is formed from dichotomous more or less irregularly developed filaments; cells in the basal part almost cylindric, 5-8  $\mu$  broad, in the middle part shorter and thicker, about 8-10  $\mu$  broad, towards the apex shorter and smaller about 3  $\mu$  broad. *Carpogonial branches* almost straight, made up of three cells, about 10  $\mu$  broad. *Cystocarps* almost spherical formed from filaments not carpospore-bearing but tetraspore-bearing. *Antheridia* are produced at the tips of the assimilating filaments. The plant is monoecious.

**Nitophyllum berggrenianum J. Agardh (Delesseriaceae)**

*Fronde* subsessili tenui membranacea, venis superficialibus usque ad lacinias superiores continuatis percursa, decomposito-pinnatifida, laciniae supra basem angustiorem mox cuneato-dilatatis, apice obtuso lobatis aut in lacinias angustiores sublineares productis, inferioribus a margine hic illuc appendiculatis, soris rotundatis per lacinias medias sparsis.

*Caespites* minuti 1-2 pollicares rosulati, fronde iterum iterumque decomposita membranaceo-lubrica constituti, sessiles stipite conspicuo nullo. *Rami frondis* singuli supra partem inferiorem angustiorem paulo magis dilatati, pinnatifidi, lobis supra sinum rotundatum invicem superpositis, inferioribus margine subinaequalibus sparsim dentatis et hic illuc in appendices minutis productis, superioribus cuneatis lobatisque lobis rotundatis. *Sori* per

lacinias medias sparsi, majusculi et rotundati. *Venae* evidentes at tenues. *Frondes* nunc appendiculis conglutinantur et praeparatione facilis dilacerantur.

*Frondem* inferiorem transverse sectam monostromaticam observavi. Caeterum duas formas vidi, quas aetate praecipue diversas judicavi. Una minor, supra praecipue descripta, lubrico-membranacea et chartae arcte adhaerens. Hujus lobi superiores abbreviati, inferioribus evidenter cuneato-dilatatis. Altera major usque 3 pollicaris, et quia elongatior laciinis angustioribus, superioribus fere linearibus praedita, magis membranacea et chartae minus adhaerens. Sori melius evoluti laciinis medias occupant, per discum sparsi, nunc in laciinis superioribus secus margines quoque obvenientes, neutquam vero modo N. lacerati secus margines seriati. *Venae* superficiales in utraque forma aequae obvenientes. Cellularum superficialium series 2-3, quae margine proximae sunt, ab interioribus parum differunt. Ipsum vero marginem occupant cellulae multo minores, subcubicae, unica serie saepissime dispositae (J. G. Agardh, *Sp. Gen. Ord. Algarum*, 3: 449; 1876).

With the frond subsessile thin membranous, transversed by superficial veins continued up to the upper laciinae, decomposed-pinnatifid, with the laciinae soon cuneately expanded above the narrower base, at the apex obtusely lobed or drawn out into narrower almost linear laciinae, the lower ones at the margin here and there appendiculate, with rounded sori scattered over the middle laciinae.

*Tufts* minute 1-2 inches rosetted, formed by the frond repeatedly decomposed membranous-smooth, sessile with no conspicuous stipe. Single branches of the frond above the narrower lower part a little more broadened pinnatifid, with the lobes above the rounded sinus mutually overlapping, the lower ones at the margin somewhat unequal sparsely toothed and here and there drawn out into minute appendages, the upper ones cuneate and lobed with the lobes rounded. *Sori* (clusters of tetrasporangia) scattered over the middle laciinae, fairly large and rounded. *Veins* evident yet slender. *Fronds* are now bound together by little appendages and are very easily torn during preparation.

I have observed the lower frond in transverse section to be single-layered. For the rest I have seen two forms which I judge to be different chiefly in age. The smaller one, principally described above, smooth-membranous and firmly adhering to paper. The upper lobes of this abbreviated, with the lower ones more evidently cuneate-broadened. The other one larger up to 3 inches, and because more elongated provided with narrower laciinae having the upper ones almost linear, more membranous and adhering less to the paper. The better developed sori occupy the middle laciinae, scattered over the disc, but often also on the upper laciinae occurring along the margins, not exactly arranged in rows along the margin in the manner of N. laceratum. Superficial veins equally occurring in each form. Series of superficial cells 2-3, which are close to the margin, differ little from the interior ones. In fact much smaller almost cubical cells, most often arranged in a single row, occupy the margin itself.

# FUNGI

## ASCOMYCETES

### *Penicillium pusillum* G. Smith (Aspergillaceae)

*Colonies in agar* Czapekii lentissime crescentibus, restrictis, primo caesiis deinde cum mycelio aero albo aut vinaceo, paulo funiculosis, rugosis; reverso brunneo-purpureo cum agarō paulo concolorato; guttulis incoloratis; glomeres mycelii sed nulla sclerotia efficientibus; *coloniis in musto ex hordeo cum agarō* celerius crescentibus, albis glaucisque, paulo floccosis et funiculosis, rugosis, mox sclerotia brunneola numerosa efficientibus; *conidiophoris* ex hyphis repentibus vel funiculis hypharum, plerumque non ramosis raro cum uno ramo, glabris, cum apicibus paulo inflatis,  $35-55 \mu$  long. et  $1.5-2 \mu$  diam.; *penicillis* monoverticillatis; *sterigmatibus* paene cylindricis,  $10-11 (15) \times 1.8-2 \mu$ , aliquando longioribus et septatis; *conidiis* glabris, primo ovatis deinde globosis  $2-2.5 \mu$  diam. aut subglobosis  $2.3-2.8 \times 2-2.2 \mu$ ; *sclerotis* brunneolis, irregulariter globosis, ferme  $300 \mu$  diam., confluentibus (G. Smith in *Trans. Brit. Mycol. Soc.*, 22: 255; 1939).

With colonies on Czapek agar very slow-growing, restricted, at first bluish-grey then with a white or vinaceous mycelium, slightly funiculose, rugose; the reverse brownish-purple with the agar almost the same colour; droplets colourless; forming compacted mycelium but no sclerotia; with colonies on wort agar more rapidly growing, white or glaucous, a little floccose and funiculose, rugose, soon forming numerous brownish sclerotia; *conidiophores* arising from trailing hyphae or ropes of hyphae, mostly unbranched rarely with a single branch, smooth, with the tips a little swollen,  $35-55 \mu$  long and  $1.5-2 \mu$  diam.; *penicilli* monoverticillate; *sterigmata* almost cylindrical,  $10-11 (15) \times 1.8-2 \mu$ , occasionally longer and septate; *conidia* smooth, at first ovate then globose  $2-2.5 \mu$  in diameter or subglobose  $2.3-2.8 \times 2-2.2 \mu$ ; *sclerotia* brownish, irregularly globose, for the most part  $300 \mu$  in diameter, confluent.

### *Sympyosirinia* E. A. Ellis (Helotiales)

*Apothecia* e synnematis specierum *Sympyosiriae* exorientia, cupulata stipitata. *Excipulum* prosenchymatosum, totum ex hyphis homomorphis subparallelis constans. *Asci* inoperculati, 8-spori. *Ascospores* uniseriatae vel in dimidio distali asci biseriatae, demum 1-septatae; *paraphyses* cylindricae. Typus [nominis] generis: *S. galii* E. A. Ellis (E. A. Ellis in *Trans. Norfolk & Norwich Nat. Soc.*, 18, no. 3: 5; 1956).

*Apothecia* originating from synnemata of a *Sympyosira*, cupulate, stipitate. *Excipulum* prosenchymatosum, composed of uniform subparallel hyphae throughout. *Asci* inoperculate, 8-spored. *Ascospores* uniseriate or becoming biseriate in the distal half of the ascus, ultimately becoming 1-septate; *paraphyses* cylindrical. Type of [name of] genus: *S. galii* E. A. Ellis.

### *Sympyosirinia galii* E. A. Ellis

*Synnemata primaria* sessilia vel substipitata, alba; *secundaria* carnosa, clavata, 1-3 mm. alta. *Conidia* cylindrica, obtusa, hyalina usque pallide

olivacea, 7-9-septata,  $35-60 \times 5-7 \mu$ , in cellula distali setas 1-3 usque ad  $50 \mu$  longas gerentia. *Apothecia* e synnematis primariis senescentibus erumpentia, stipitata, cupulata,  $1.0-1.5$  mm. diametro, ad 3 mm. alta. *Discus* planus, immarginatus, pallide griseo-brunneus. *Asci* cylindrico-clavati, 8-spori,  $100-127 \times 7-9 \mu$ , poro iodo tincto haud caerulecente. *Ascospores* uniseriatae, ovoideae, continuae vel 1-septatae, hyalinae,  $10-15 \times 3.5-4 \mu$ . *Paraphyses* cylindricae,  $2 \mu$  latae. *Excipulum* prosenchymatosum (E. A. Ellis in *Trans. Norfolk & Norwich Nat. Soc.* 18, no. 3: 6; 1956).

*Primary synnemata* sessile or substipitate, white; *secondary* fleshy, clavate, 1-3 mm. high. *Conidia* cylindrical, obtuse, hyaline to pale olive-green, 7-9-septate,  $35-60 \times 5-7 \mu$ , on the distal cell bearing 1-3 setae up to  $50 \mu$  long. *Apothecia* erumpent from old primary synnemata, stipitate, cupulate,  $1.0-1.5$  mm. in diameter, to 3 mm. high. *Disc* flat, immarginate, pale greyish-brown. *Asci* cylindric-clavate, 8-spored,  $100-127 \times 7-9 \mu$ , with the pore not blued by iodine. *Ascospores* uniseriate, ovoid, continuous or 1-septate, hyaline,  $10-15 \times 3.5-4 \mu$ . *Paraphyses* cylindric,  $2 \mu$  broad. *Excipulum* prosenchymatosus.

# BASIDIOMYCETES

### *Aecidium hederae* Wakefield (Uredinales)

*Pycnidia* amphigena, praecipue hypophylla, laxe gregaria, primo mellea demum obscurantiora,  $80-120 \mu$  diametro. *Aecidia* hypophylla vel petiolicola, conferta, per folii totam superficiem aequaliter distributa, matricem deformatia, cupulata,  $0.5-1.5$  mm. diametro, margine albido pulchre revoluto 5-7-inciso. *Pseudoperidii* cellulae angulatae, firme conjunctae,  $15-20 \mu$  diametro, vel  $25 \times 20 \mu$ , pariete  $2-2.5 \mu$  crasso, verrucoso-striato. *Aecidiospores* globosae vel subglobosae, leviter angulatae, subhyalinae, laeves,  $18-19 \times 15 \mu$ , tenuiter tunicatae, poris germinationis 4-5 instructae (E. M. Wakefield in *Kew Bull.*, 1931: 202; 1931).

*Pycnidia* amphigenous [i.e. on two sides], chiefly hypophyllous [i.e. on lower side of leaf], loosely clustered, at first honey-coloured later becoming darker,  $80-120 \mu$  in diameter. *Aecidia* hypophyllous or on the petiole, crowded, evenly distributed over the whole leaf surface, distorting the host, cupulate,  $0.5-1.5$  mm. in diameter, with a whitish beautifully revolute 5-7-incised margin. *Cells of the pseudoperidium* angular, firmly united,  $15-20 \mu$  in diameter, or  $25 \times 20 \mu$ , with the wall  $2-2.5 \mu$  thick, verrucosely striate. *Aecidiospores* globose or subglobose, slightly angular, almost hyaline, smooth,  $18-19 \times 15 \mu$ , thin-walled, provided with 4-5 germ pores.

### *Hygrophorus speciosus* Peck (Agaricaceae)

*Pileo* ex ovato vel subconico expanso, margine tenui recurvo, glabro, glutinoso, saepe minute umbonato, nitide rubro vel coccineo, demum lutescente; *stipe* longo, subaequali, solido, albo vel lutescente, plerumque viscidio; *lamellis* arcuatis, decurrentibus, subdistantibus, candidis, interstitiis venosis; *sporis* ellipsoideis,  $8-9 \mu$  long. Gregarius, 8-13 cm. altus;

pileus  $2\frac{1}{2}$  cm. latus, stipes 6-10 mm. crassus. *Pereximia* species. Umbro parvus et discus diutius reliquo pileo colorem servant (P. A. Saccardo, *Sylloge Fungorum*, 5: 415; 1887).

With the *cap* at first ovate or subconical, then expanded, the margin thin recurved, glabrous, glutinous, often minutely umbonate, brightly red or crimson, then becoming yellowish; with the *stem* long, almost equal (i.e. cylindrical), solid, white or yellowish, generally viscid; with the *gills* arcuate, decurrent, sub-distant, white, with veined interspaces (i.e. anastomosing); with *spores* ellipsoid,  $8-9 \mu$  long. Gregarious, 8-13 cm. high; cap 2.5 cm. broad, stem 6-10 mm. thick. Very showy species. The small umbo and disc retain colour longer than the rest of the cap. [This description in the ablative should be compared with Bresadola's below in the nominative.]

#### *Hygrophorus speciosus* Peck (Agaricaceae)

*Pileus* carnosus, tenuis, e campanulato expansus et umbonatus, laete flavus, umbone aurantio-fulvus, glaber, glutinosus, glutine hyalino, 3-6 cm. latus; *lamellae* distantes, crassae, albae, ad marginem pilei citrinae, quandoque totae citrinae, acie alba, in fundo venoso-conjunctae, postice decurrentes; *stipes* e farcto subcavus, aequalis, apice albus, infra velum flavus, flocculosus, basi albidus, glutinosus, 3-7 cm. longus, 8-15 mm. crassus; *velum* inferum, glutinoso-fibrillosum hyalinum, ad stipitem saepe in annulum manifestum; *caro* alba, sub cuticula citrina, inodora et insapora; *sporae* obovato-ellipticae, hyalinae,  $8-10 \approx 5-6 \mu$ ; *basidia* clavata,  $50-70 \approx 6-8 \mu$  (G. Bresadola, *Iconogr. Mycol.*, 7: t. 313; 1928).

*Cap* fleshy, thin, at first campanulate then expanded and umbonate, bright yellow, at the umbo orange-tawny, glabrous, glutinous, with hyaline glutin, 3-6 cm. broad; *gills* distant, thick, white, at the margin of the cap lemon-yellow, sometimes all yellow, with white edge, at the base anastomosing, decurrent; *stem* at first stuffed later somewhat hollow, equal, at the apex white, below the veil yellow, flocculose, at the base white, glutinous, 3-7 cm. long, 8-15 mm. thick; *veil* inferior, glutinosely flocculose hyaline, on the stem often appearing as a ring; *flesh* white, below the cuticle lemon-yellow, scentless and flavourless; *spores* obovate-elliptic, hyaline,  $8-10 \times 5-6 \mu$ ; *basidia* clavate,  $50-70 \times 6-8 \mu$ .

#### *Puccinia menthae* Persoon (Uredinales)

*Pycnidia* vel in parvos greges dispositis vel sparsis, melleis; *aeciditis* hypophyllis v. saepe caulicolis, in folio maculis plerumque purpureo-rufis incidentibus et in greges plus minusve regulares dispositis, in caulibus, petiolis et nervis foliorum greges incrassatos saepe valde elongatos formantibus, rarius sparsis, irregulariter apertis, margine vix v. irregulariter lacerato, erecto v. parum intus curvato; *aecidiosporis* subglobosis ellipsoideis v. polygonii, verruculosis, pallide flavis,  $24-40 = 17-28$ ; *soris uredosporiferis* hypophyllis, mox maculis flavidis v. brunneolis incidentibus, mox sine maculis, minutis, orbicularibus v. ellipticis, sparsis v. aggregatis, epidermide

rupta cinctis, mox nudis, subinde confluentibus, cinnamomeis; *uredosporis* globosis, subglobosis, ellipsoideis v. obovatis, echinulatis, pallide brunneis,  $17-28 = 14-19$ ; *soris teleutosporiferis* hypophyllis, rarius caulicolis, sparsis v. aggregatis, minutis, subinde confluentibus, orbicularibus, pulverulentis, atrofusci; *teleutosporis* ellipsoideis, ovatis v. subglobosis, utrinque rotundatis, apice papilla pallida v. hyalina lata praeditis, medio non v. vix constrictis, verruculosis, obscure brunneis,  $26-35 = 19-23$ ; pedicello sporam superante, hyalino, gracili (P. Sydow & H. Sydow, *Monographia Uredinearum*, 1: 282; 1904).

With *pycnidia* arranged in small groups or scattered, honey-coloured; *aecidia* hypophyllous or often on the stems, situated on the leaves generally as purple-reddish spots and disposed in more or less regular groups, forming on stems, petioles and veins thickened groups often much elongated, rarely scattered, opening irregularly, with the margin scarcely or irregularly torn, erect or slightly incurved; *aecidiospores* subglobose, ellipsoid or polygonal, verruculose, pale yellow,  $24-40$  by  $17-28 \mu$ ; *uredosori* hypophyllous, soon in yellowish or brownish spots or lacking spots, minute, roundish or elliptical, scattered or aggregated, surrounded by the torn epidermis, soon naked, sometimes confluent, cinnamon; *uredospores* globose, subglobose, ellipsoid or obovate, echinulate, light brown,  $17-28$  by  $14-19 \mu$ ; *teleutosori* hypophyllous, rarely on the stems, scattered or grouped together, minute, sometimes confluent, rounded, powdery, dark brown; *teleutospores* ellipsoid, ovate or subglobose, rounded at both ends, with a broad pale or colourless apical papilla, not or scarcely constricted at the centre, verruculose, dull brown,  $26-35$  by  $19-23 \mu$ ; pedicel longer than the spore, colourless, slender.

#### *Puccinia oreogeta* Sydow (Uredinales)

*Uredosori* hypophylli, sparsi vel pauci, laxe seriatim dispositi, non confluentes, oblongi,  $200-300 \mu$  longi, epidermide tecti, flavi; *uredospores* ovato-globosae, ovatae vel late ellipsoideae, subinde etiam irregulares,  $22-30 \approx 17-22 \mu$ , dense verruculoso-echinulatae, membrana hyalina vel subhyalina ca.  $1.5 \mu$  crassa, poris germ. indistinctis; *teleutosori* conformes sed obscuriores, brunnei, compacti; *teleutospores* oblongae usque clavatae, ad apicem plerumque rotundatae, rarius leniter truncatae vel conicoproductae, ad septum plerumque leniter constrictae, postice sensim in pedicellum attenuatae,  $35-52 \mu$  longae, cellula superiore  $16-21 \mu$  lata, inferiore plerumque paullo longiore et angustiore, episporio ad apicem  $8-14 \mu$  crasso et flavo-brunneo; pedicello persistenti,  $25-45 \mu$  longo, hyalino vel subhyalino (H. Sydow in *Annales Mycol.*, 35: 224; 1937).

*Uredosori* hyphyllous, few or sparse, loosely linearly arranged, not confluent, oblong,  $200-300 \mu$  long, covered by the epidermis, yellowish; *uredospores* ovate-globose, ovate or broadly ellipsoid, occasionally also irregular,  $22-30$  by  $17-22 \mu$ , densely verruculoso-echinulate [set with small wart-like and spiny projections], with a hyaline or almost hyaline membrane about  $1.5 \mu$  thick, with indistinct germ pores; *teleutosori* similar [to the

uredosori] but less conspicuous, brown, compact; *teleutospores* oblong to club-shaped, at the apex commonly rounded, more rarely somewhat truncate or conically elongated, often lightly constricted at the septum, postically tapering into the stalk, 35-52  $\mu$  long, with the upper cell 16-21  $\mu$  broad, the lower one commonly a little longer and narrower, with the episporule at the apex 8-14  $\mu$  thick and yellow-brown; with the pedicel persistent 25-45  $\mu$  long, hyaline or almost hyaline.

**Ramaria flavoviridis** Corner & Thind (Clavariaceae)

Ad 17  $\times$  7 cm., gregaria v. caespitosa, trunco subnullo, e basi multiramosa, carnosa, laete viridis dein flavoviridis, apicibus concoloribus v. albidulis, rhizomorphis gracilibus albis copiosis praedita; ramis polychotomis, superne dichotomis et plus minus compressis; carne alba insipida, Anethi soa odore.

*Sporae* 6-8.3  $\times$  3.3-7  $\mu$ , brunneolo-ochraceae, ellipsoideae, subverruculosa v. subechinulatae. *Hyphae* in tramsis receptaculorum rhizomorphisque dimitiae; skeletales 3-5  $\mu$  latae, tunicis 0.5-1 (-1.5)  $\mu$  crassis, sparsae sed conspicuae, vix ramosae, aseptatae, ad 1500  $\mu$  longae, apicibus filiformibus elongatis 1  $\mu$  latis vel ut segmenta intercalaria; hyphae tenuitunicatae 2.5-9  $\mu$  latae, hinc inde ad 17  $\mu$ , copiosae, fibulatae, cellulis ad 140  $\mu$  longis (E. J. H. Corner & K. S. Thind in *Trans. Brit. Mycol. Soc.*, 44: 236; 1961).

Up to 17  $\times$  7 cm., gregarious or clustered, with the main stem almost nil, from the base much-branched, fleshy, light green then yellow-green, with the tips concolorous or whitish, provided with slender white abundant rhizomorphs; with branches polychotomous, above dichotomous and more or less compressed; with flesh white insipid, having the smell of Anethum soa.

*Spores* 6-8.3  $\times$  3.3-7  $\mu$ , light brownish-ochraceous, ellipsoid, obscurely verruculose or almost echinulate. *Hyphae* in the flesh of the receptacles and in the rhizomorphs dimitic; skeletal hyphae 3-5  $\mu$  broad, with 0.5-1 (-1.5) thick walls, sparse but conspicuous, scarcely branched, without septa, up to 1,500  $\mu$  long, with filiform elongated ends 1  $\mu$  broad or as intercalary segments; thin-walled hyphae 2.5-9  $\mu$  broad, here and there to 17  $\mu$ , plentiful, provided with clamps, with cells up to 140  $\mu$  long.

**Sphacelotheca sclerachnes** Wakefield (Ustilaginales)

*Sori* in inflorescentiis evoluti, easque omnino destruentes, primitus a vagina inclusi circiter 1-2 mm. longi, membrana cellulis subhyalinis 10-12  $\mu$  diametro tecti, columella centrali praediti. *Massa sporarum* atrobrunnea, mox pulverulenta. *Sporae* maxime variabiles, globosae, subglobosae, pyriformes vel citriformes, brunneo-violaceae, laeves, 10  $\mu$  diametro, vel 12-15  $\times$  9-10  $\mu$  (E. M. Wakefield in *Kew Bull.*, 1931: 203; 1931).

*Sori* developed in inflorescences and entirely destroying these, at first enclosed by a sheath about 1-2 mm. long, covered by a membrane with almost colourless cells 10-12  $\mu$  in diameter, provided with a central columella. *Spore mass* blackish-brown, soon powdery. *Spores* exceedingly variable,

globose, subglobose, pear-shaped or lemon-shaped, brownish-violet, smooth, 10  $\mu$  in diameter, or 12-15  $\times$  9-10  $\mu$ .

**MYXOMYCETES**

**Comatricha solitaria** Nannenga-Bremekamp (Stemonitaceae)

*Sporangia* solitaria vel subsolitaria, stipitata, erecta, parva, altitudine tota circ. 0.6 mm. *Hypothallus* inconspicuus vel nullus. *Stipes* sporangium altitudine circ. dimidia parte excedens, niger, opacus, basi fibrosus, in sporangium immersum. *Sporangium* globosum, 0.35 mm. diam., saturate brunneum; peridium evanescens; columella usque ad medium sporangium porrecta et ibi in ramulos plures divisa. *Capillitium* sub-nigrum, laxius, e filamentis crassis et rigidis, dichotome ramificatis, vix reticulatim connectis compositum. *Sporae* per saturam saturate brunneae, lucem orientem versus visae griseo-brunneae, globosae, circ. 13  $\mu$  diam. in typo, in speciminibus aliis interdum 14-16 (18)  $\mu$  diam., minute verruculosae. *Plasmodium* hyalinum, incolor (N. E. Nannenga-Bremekamp in *Acta Bot. Neerland.*, 11: 31; 1962).

*Sporangia* solitary or nearly solitary, stipitate, erect small, with total height about 0.6 mm. *Hypothallus* inconspicuous or lacking. *Stipe* exceeding the sporangium in height by about a half (i.e. about 1½ times the height of the sporangium), black, opaque, fibrous at base, immersed in (i.e. penetrating into) the sporangium. *Sporangium* globose 0.35 mm. in diameter, dark brown; peridium evanescent; columella extended to the middle of the sporangium and then divided into several branchlets. *Capillitium* nearly black, rather lax, formed from filaments thick and rigid, dichotomously branched, scarcely reticulately connected. *Spores* in the mass dark brown, grey-brown seen by transmitted light, globose, about 13  $\mu$  in diameter in the type, in other specimens sometimes 14-16 (18)  $\mu$  in diameter, minutely warty. *Plasmodium* hyaline, colourless.

**FUNGI IMPERFECTI**

**Camarosporium rosae** Grove (Sphaeropsidales)

*Pycnidia* dense sparsa, globosa, papillata, parva (ca. 120  $\mu$  diam.), atra, velata, dein papillâ per rimam laceratam protrusâ. *Sporulae* oblongae, utrinque obtuse rotundatae, 3-septatae (rarissime 4-5-septatae), septis longitudinalibus uno aut duobus praeditae, aequaliter atro-brunneae, vix constrictae, 16-20  $\times$  5.5-6  $\mu$ , sporophoris nullis visis (W. B. Grove, *Brit. Stem- and Leaf-Fungi*, 2: 362; 1937).

*Pycnidia* densely scattered, globose, papillate, small (about 120  $\mu$  in diameter), black, covered, then protruding the papilla through a torn fissure. *Spores* oblong, obtusely rounded at both ends, 3-septate (very rarely 4-5-septate), provided with one or two longitudinal septa, evenly dark-brown, hardly constricted, 16-20  $\times$  5.5-6  $\mu$ , with no sporophores seen.

*Rhodotorula macerans* Frederiksen (Cryptococcaceae)

Cultura in extracto mali: Post 3 dies ad 25°C cellulae sunt oblongo-ovales (3.3-5.5 × 7-12  $\mu$ ), singulae vel binae. Post unum mensem ad 17°C sedimentum atque annulus formati sunt.

Cultura in malto-agar: Post 3 dies ad 25°C cellulae sunt oblongo-ovales (3.5 × 7-12  $\mu$ ), singulae vel binae. Cultura in striis post unum mensem ad 17°C laevis et nitens est vel ex parte rugosa et opaca, color roseus vel ruber.

Cultura in lamina vitrea: Nullum pseudomycelium.

Fermentatio: Nulla.

Assimilatio sacchari: Glucosid +; Galactosid + (exigua); Saccharosid +; Maltosid +; Lactosid + (saepe exigua).

Assimilatio kaliumnitriti: Adest.

Ethanoleum ut unica origo carbonis: Nullum incrementum.

Decompositio arbutini: Variabilis.

Cultura in pectino: Incrementum observatur.

Productio compositorum amylo similium: Adest.

Culturae huius speciei conservantur in 'Centralbureau voor Schimmelcultures', Delft, Hollandia, item in collectionibus culturarum fungorum, quas Academia regia agriculturae, pars phytopathologica, in Hafnia sustentat (P. S. Frederiksen in *Friesia*, 5: 237; 1956).

Growth on malt extract: After 3 days at 25°C the cells are oblong-oval (3.5-5.5 × 7-12  $\mu$ ), single or in pairs. After one month at 17°C a sediment and a ring are formed.

Growth on malt-agar: After 3 days at 25°C, the cells are oblong-oval (3.5 × 7-12  $\mu$ ), single or in pairs. The streak-culture after one month at 17°C is smooth and shiny or in part rugose and dull, the colour rose or red.

Culture on glass slide: No pseudomycelium.

Fermentation: Absent.

Assimilation of sugar: Glucose +; Galactose + (weak); Saccharose +; Maltose +; Lactose + (often weak).

Assimilation of potassium nitrate: Positive.

Ethanoleum as sole source of carbon: No increase.

Decomposition of arbutin: Variable.

Growth on pectin: Increase observed.

Production of compounds like starch: Positive.

Cultures of this species are kept in the Centralbureau voor Schimmelcultures, Delft, Holland, also in the fungus culture collection which the Royal University of Agriculture [i.e. Royal Veterinary and Agricultural College], phytopathological section, in Copenhagen maintains.

[An interesting example of cultural reactions effectively summarized in simple clear Latin. The accepted spellings in pharmaceutical Latin for the sugars are *glucosum*, *galactosum*, *saccharosum*, *maltosum*, *lactosum*, all neuter and Second Declension like *saccharum* (sugar) and *maltum* (malt).]

*Septogloewum punctatum* Wakefield (Melanconiales)

*Maculae* aridae, elongatae, angulatae, nervis limitatae, fusco-marginatae, circiter 8 mm. latae. *Acervuli* hypophylli, atro-olivacei, punctati, compacti,

pulvinati, primo epidermide tecti, demum erumpentes. *Conidiophora* filiformia, densissime aggregata, olivacea. *Conidia* cylindracea, utrinque rotundata, dilute olivacea, 25-32 × 5 (-6)  $\mu$ , demum 3-septatae (E. M. Wakefield in *Kew Bull.*, 1931: 204; 1931).

*Spots* dry, elongated, angular, bounded by the veins, dark-margined, about 8 mm. broad. *Acervuli* hypophyllous [i.e. on lower side of leaf], blackish olive-green, punctate, compact, cushion-shaped, at first covered by the epidermis, at length breaking out. *Conidiophores* filiform, very densely crowded, olive-green. *Conidia* cylindrical, rounded at each end, pale olive-green, 23-32 × 5 (-6)  $\mu$ , at length 3-septate.

## LICHENES

*Chiodection emergens* Vainio (Chiodectionaceae)

*Thallus* sat tenuis, verruculoso-inaequalis, cinerascens aut cinereo-glaucens, leviter nitidus, KOH non reagens, creberime contextus, hypothallo nigricante aut pallido-fuscescente saepe limitatus. *Pseudostromata* leviter aut modice prominentia, rotundata aut raro ellipsoidea, diam. 0.6-0.35 mm., sat crebra, simplicia aut raro 2 confluentia, depressa, sat laevigata, albida aut rarius thallo subconcoloria, leviter nitida, creberime contexta, KOH non reagentia, basin versus sensim dilatata aut sat praerupta, hymenia solitaria continentia, strato amphitheciali obducta thallino, gonidiis concatenatis, 0.007-0.010 mm. crassis, trentepohlioides instructo, intus albido. *Disci* rotundati aut raro ellipsoidei, lat. 0.2-0.3 mm., haud aut leviter impressi, plani, livido-rufescentes aut nigricantes, subnudi. *Hypothecium* olivaceo-fuscescens aut olivaceum, tenui, 0.02-0.03 mm. crassum. *Parathecium* olivaceo-fuscescens, crass. 0.03-0.04 mm. *Hymenium* 0.09-0.12 mm. crassum, jodo fulvo-rubescens aut dilute rufescens (haud caerulescens). *Epitheciun* decoloratum. *Paraphyses* ramoso-connexae, gelatinam percurrentes, crass. 0.001 mm., sat crebre septatae. *Asci* clavati, membrana fere tota leviter incrassata. *Sporae* 8:nae, distichae, decolorae, oblongo-fusiformes aut ovoideo-oblongae, rectae, apicibus obtusis, 3-septatae, saepe strato gelatinoso tenui indutae (E. A. Vainio, *Lichenes Ins. Philipp.*, 3: 283; 1920).

*Thallus* rather thin, verrucosely uneven, greyish or greyish-glaucous, slightly glossy, KOH-, very densely interwoven, often delimited by a blackish to pale brownish hypothallus. *Pseudostromata* slightly or moderately prominent, rounded or rarely ellipsoid, in diameter 0.6-0.35 mm., rather crowded, simple or rarely 2 confluent, depressed, rather smooth, whitish or more rarely subconcolorous, slightly glossy, very densely interwoven, KOH-, towards the base gradually spreading or somewhat abruptly incised, each containing a solitary hymenium, covered by an amphithecial thallus-like stratum layer, provided with filamentous 7-10  $\mu$  thick *Trentepohlia*-like gonidia, within whitish. *Discs* rounded or rarely ellipsoid, 0.2-0.3 mm. broad, not or lightly impressed, plane, becoming livid reddish or blackish, almost naked. *Hypothecium* olive-blackish-brown or olive-green, thin, 20-30

$\mu$  mm. thick. *Parathecium* olive-blackish-brown, 30-40  $\mu$  thick. *Hymenium* 90-120  $\mu$  mm. thick, I+ tawny red or pale reddish (not becoming blue). *Epitheciun* colourless. *Paraphyses* anastomosing, within mucilage, 1  $\mu$  thick, rather closely septate. *Asci* clavate, with the wall almost uniformly thickened. *Spores* 8, biseriate, colourless, oblong-fusiform or ovoid-oblong, straight, with apices obtuse, 3-septate, often covered with a thin gelatinous layer [i.e. halonate].

*Cladonia rotundata* Ahti (Cladoniaceae)

*Podetia* albido-cinerascentia et partim rufescens, acidum fumarprotocetraricum et atranorinam continentia, dichotome aequaliter vel subaequaliter dense ramosa, axem principalem deficiente vel axes indistinctos formantia, vulgo pulvilos densos rotundatos efficientia, internodiis tenuibus, 0.4-0.8 mm. crassis, in summo ramulis ultimis divaricatis, rufescens, medulla exteriore tenui compacta facile disintegrataque. *Pycnidia* globosa vel ovoidea, gelatinam hyalinam continentia (T. Ahti in *Ann. Bot. Soc. Zool.-Bot. Fenn.*, 32, no. 1: 29; 1961).

*Podetia* whitish-greyish and partly becoming reddish, containing fumarprotocetraric acid and atranorine, equally or almost equally densely dichotomously branched, with the principal axis absent or indistinct, commonly making dense rounded cushions, with slender internodes 0.4-0.8 mm. thick, at the apex with divaricate reddish ultimate branches, with thin, compact and easily disintegrating outer medulla. *Pycnidia* globose or ovoid, containing hyaline jelly.

*Laurera ambigua* Malme (Pyrenulaceae)

*Crusta* tenuissima, olivacea v. sordide cinerea, continua, laevis, subopaca, KOH non reagens. *Apothecia* solitaria vel saepius 2-4 approximata coacervatae, hemisphaerica, basi abrupta (haud constricta), denudata (tantum basi thallo obducta), circiter 0.5 mm. lata, atra vel nigricantia, apice nonnihil umbilicata, ostiolo papilla minutissima nigra indicata. *Peritheciun* nigricans, integrum, basi tamen paullulo tenuius, KOH haud reagens; nucleus subglobosus vel basi nonnihil appianata, pallidus, oleoso-guttulosus, J non reagens (tantum contentu ascorum juniorum sordide rubescens), KOH immutatus. *Asci* inflato-clavati, usque 160  $\mu$  longi et 45  $\mu$  crassi, membrana superne nonnihil incrassata. *Sporae* octonae vel abortu pauciores, irregulariter distichae, incolores, oblongo-ellipsoideae, (40-) 45-55 (-60)  $\mu$  longae, (14)-15-18 (-21)  $\mu$  crassae, rectae, utroque apice rotundatae, valde murales, septis transversis circiter 11, halone crassiusculo circumdatae, J haud reagentes. *Paraphyses* ramoso-connexae, vix 1  $\mu$  crassae, gelatinam copiosam percurrentes (G. O. A. Malme in *Arkiv f. Bot.*, 19, No. 1: 24; 1924).

*Crust* very thin, olive-green or sordid grey, continuous, smooth, rather dull, KOH-. *Apothecia* solitary or more often 2-4 confluent, hemispherical, at the base incised (not constricted), naked (only at the base covered by the thallus), about 0.5 mm. broad, black or blackish, at the apex somewhat

umbilicate, with the ostiole indicated by a very minute black papilla. *Peritheciun* becoming black, entire, at base nevertheless a little thinner, KOH-; nucleus almost globose or with base somewhat flattened, pale, provided with oil droplets, I- (only the content of the younger asci becoming dirty reddish), KOH-. *Asci* swollen-clavate, up to 160  $\mu$  long and 45  $\mu$  thick, with the membrane towards the apex somewhat thickened. *Spores* eight or by abortion fewer, irregularly biseriate, colourless, oblong-ellipsoid, (40-) 45-55 (-60)  $\mu$  long, (14)-15-18 (-21)  $\mu$  thick, straight, at both ends rounded, thickly walled, with about 11 transverse septa, fairly thickly halonate, I-. *Paraphyses* anastomosing, scarcely 1  $\mu$  thick, within copious mucilage.

*Opegrapha sorediifera* P. James (Opegraphaceae)

*Thallus* epiphloeoed, tenuissimus, plerumque indeterminatus, aliquando hypothallo atro-cinereο limitatus, furfuraceus vel scabridus, impolitus  $\pm$  rimosus sed non areolatus; *soralia* numerosa, simplicia,  $\pm$  punctiformia, parva, ad 1.2 mm. lata, raro 2 vel 3 in areas erosas ad 3 mm. diametro coalescentia, crateriformia, aurea vel ochracea. *Soredia* minute granularia vel farinacea. *Ascocarpi* lirellati, breves, c. 2 mm. longi, 1 mm. lati, simplices, crassi, apice obtusi, margine  $\pm$  tumidi et nudi; discus non expositus.

*Thallus* 30-60  $\mu$  crassus; cortex c. 15  $\mu$  crassus, strato algaceo medullae indistincte delimitato; algae ad *Trentepohlia* pertinentes; cellulae (4-) 5-7 (-8)  $\mu$  diametro, flavae ad aurantiaco-brunneae. *Excipulum* nigrum, carbonaceum, ad 60  $\mu$  latum; *thecium* 100-120  $\mu$  altum; *paraphyses* 1  $\mu$  crassae, ramosae, anastomosantes; *hypothecium* ad 15  $\mu$  crassum, incolor; *asci* 60-80  $\mu$  longi, 13-16  $\mu$  lati, pariete uniformi 2-3  $\mu$  crasso, 8-spored; *sporae* 30-40 (-45)  $\mu$  longi, 4-5  $\mu$  crassae, primo incolores, raro aetate brunnescentes, 10-14-septatae. *Pycnidiospores* 4-6  $\mu$  longae, 0.6-0.8  $\mu$  crassae, bacilliformes (P. W. James in *The Lichenologist*, 2: 86; 1962).

*Thallus* epiphlooidal, very thin, mostly indeterminate but occasionally bounded by a grey-black hypothallus, scurfy or scabrid, matt, more or less cracked but not areolate; *soralia* numerous, simple, more or less punctiform, small, to 1.2 mm. broad, rarely 2 or 3 confluent into erose areas to 3 mm. in diameter, crateriform, golden or buff. *Soredia* minutely granular or farinaceous. *Ascocarps* lirellate, short, about 2 mm. long, 1 mm. broad, unbranched, curled, at the apex obtuse, at the margin more or less tumid and naked; disc not exposed.

*Thallus* 30-60  $\mu$  thick; cortex about 15  $\mu$  thick, with the algal layer of the medulla indistinctly defined; algae belonging to *Trentepohlia*; cells (4-) 5-7 (-8)  $\mu$  in diameter, yellow to orange-brown. *Excipulum* black, carbonaceous, to 60  $\mu$  broad; *thecium* 100-120  $\mu$  high; *paraphyses* 1  $\mu$  thick, branched, anastomosing; *hypothecium* to 15  $\mu$  thick, colourless; *asci* 60-80  $\mu$  long, 13-16  $\mu$  broad, with the wall uniform 2-3  $\mu$  thick, 8-spored; *spores* 30-40 (-45)  $\mu$  long, 4-5  $\mu$  thick, at first colourless, rarely brownish with age, 10-14-septate. *Pycnidiospores* 4-6  $\mu$  long, 0.6-0.8  $\mu$  thick, bacilliform.

## BRYOPHYTA

### HEPATICAE

#### *Frullania kehdingiana* Stephani (Jungermanniaceae)

Dioica magna gracilis olivacea flaccida, effuse caespitans vel pendula. *Caulis* ad 12 cm. longus, regulariter bipinnatus, pinnis ad 15 mm. longis, arcuatim patulis, remotiusculis, sparsim breviterque pinnulatis. *Folia caulinata* conferta, recte patula, plano disticha, ovata (1.33 mm. longa, medio 1 mm. lata), apice late rotundata, minute apiculata, dorso truncata, caulem itaque haud superantia, basi antica exappendiculata. *Cellulae superae* 18 × 27  $\mu$ , trigonis parvis, basales 18 × 36  $\mu$ , trigonis majusculis subnodulosis, parietibus ubique flexuosis. *Lobulus* parvus, a caule remotus, e margine folii oblique patens, cylindricus vel anguste clavatus, conico-papulosus. *Amphigastria caulinata* majuscula, caule quintuplo latiora, cordiformia, transverse inserta, ad medium inciso-biloba, sinu angusto, lobis late triangulatis acutis. *Perianthia* obovata, rostro brevissimo, ore truncato anguste recurvo. *Folia floralia* intima caulinis duplo longiora, ligulata, margine (praecipue supero) breviter lacerato; lobulus ad medium solutus, folio aequilongus basique aequilatus, superne duplo angustior, marginibus praecipue inferis profunde laceratis. *Amphigastria floralia* intima lobulo duplo latiora, ultra medium bifida, marginibus similiter laceratis. *Androecia* in caule ramisque seriata, capitata, sessilia, in pinnulis terminalia (F. Stephani, *Sp. Hepat.*, 4: 577; 1911).

Dioicous large slender dull green (olivaceous) flaccid, effusely tufted or pendulous. *Stem* to 12 cm. long, regularly bipinnate, with the pinnae to 15 mm. long, arcuate-patulous, rather distant from one another, sparsely and shortly pinnulate. *Cauline leaves* crowded, straightly outspread, distichous in one plane, ovate (1.33 mm. long, at the middle 1 mm. broad), at the apex broadly rounded, minutely apiculate, on the back truncate, accordingly not exceeding the stem, at the anticus base not appendiculate. *Upper cells* 18 × 27  $\mu$  with small trigones, basal ones 18 × 36  $\mu$ , with rather large almost nodulose trigones, with the walls everywhere flexuose. *Lobule* small, remote from the stem, obliquely spreading from the margin of the leaf, cylindric or narrowly clavate, conically papillose. *Cauline amphigastria* rather large, five times broader than the stem, heart-shaped, transversely inserted, to the middle incisedly two-lobed, with a narrow sinus, the lobes broadly triangular acute. *Perianths* obovate, with an exceedingly short beak, the mouth truncate narrowly recurved. *Innermost floral leaves* twice as long as the caulin ones, ligulate, with the margin (especially the upper) shortly lacerate; lobule free to the middle, equal in length and at base just equal in breadth to the leaf, above half as broad with the margins especially the lower deeply lacerate. *Innermost floral amphigastria* twice as broad as the lobule, beyond the middle bifid, with the margins similarly lacerate. *Androecia* arranged in rows on the stem and branches, capitata, sessile, terminal on the pinnules.

#### *Marchantia wilmsii* Stephani (Marchantiaceae)

Major, dilute viridis vel fuscescens. *Frons* ad 4 cm. longa, 7 mm. lata, tenuis; *costa* haud crassa, sed distincte convexo producta sensim in alas

tenues excurrens. *Epidermis* tenera. *Stomata* majuscula, parum prominentia, ore interno 4 cellulis plano-conicis circumdata. *Appendicula* squamarum late cordiformia, acuta, margine regulariter breviterque dentata, cellulis majusculis subaequimagnis conflata. *Pedunculus* carpocephali validus ad 3 cm. longus, nudus, apice paleis filiformibus brevibus barbatus; paleae involucrales breves, confertae et numerosissimae, late lanceolatae acuminatae vel longe bi-trifidae. *Capitula* feminea magna 9-lobata, centro magno valde convexo, lobis ex angusta basi optime cuneatim ampliatis, apice rotundatis contiguis, basi sinu rotundato discretis. *Involucra* margine cellulis prominulis longe papulosa. *Perianthia* hyalina, ore contracto integro. *Capsula* fusco-brunnea. *Sporae* sulphureae papillatae 35  $\mu$ . *Elateres* flavescentes 600  $\mu$ . *Capitula* mascula femineis aequimagna, brevius pedunculata, palmatifida, 8-lobata, lobis vix ad medium solutis, ut in femineis sinu rotundato discretis. *Scyphuli* margine creberrime breviterque ciliati (F. Stephani in *Bull. Herb. Boiss.*, 7: 398; 1899).

Rather large, pale green or becoming blackish brown. *Thallus* (*Frond*) to 4 cm. long, 7 mm. broad, thin; *midrib* not thick, but distinctly convexly prominent gradually running out into thin wings. *Epidermis* delicate. *Pores* (*Stomata*) rather large, not very conspicuous, with the internal opening surrounded by 4 plano-conical cells. *Ventral scales* (*Appendicula of scales*) broadly heart-shaped, acute, at the margin regularly and shortly dentate, made up of rather large cells equal in size. *Peduncle* of receptacle (*carpocephalus*) stout to 3 cm. long, naked, at the apex bearded with short filiform scales (pales); involucral scales (pales) short, crowded and very numerous, broadly lanceolate acuminate or long bi- or trifid. *Female* receptacles (*capitula*) large 9-lobed, with the centre large strongly convex, the lobes from a narrow base well expanded cuneately, at the apex rounded contiguous, at the base separated by the rounded sinus. *Involucres* at the margin long papillose with rather prominent cells. *Perianths* hyaline, with the mouth contracted entire. *Capsules* dark brown. *Spores* sulphur-coloured papillate 35  $\mu$ . *Elaters* yellowish 600  $\mu$ . *Male* *capitula* the same size as the females, shortly pedunculate, palmatifid, 8-lobed, with the lobes hardly free to the middle, as in the females separated by the rounded sinus. *Gemmae cups* (*Scyphules*) at the margin very closely and shortly ciliate.

## MUSCI

#### *Pilopogon lorentzii* Fleischer (Dicranaceae)

Dioicus; flores feminei terminales et innovando laterales, aggregati; archegonia elongata. *Plantae* laxe caespitosae, robustae, nitidulae, intense nigrescentes, ad apicem luteo-virides, 3-6 cm. altae. *Caulis* erectus, paulum flexuosus, parce divisus vel dichotome ramosus, inferne ferrugineo-tomentosus, dense foliosus, versus apicem floriferum filiformi-attenuatus, simplex, apice in capitulum incrassatus; rami steriles robustiores, acuminati. *Folia caulinata* sicca erecta vel cauli arcuato-incumbentia, hic illic rugulosa, humida

erecto-patentia, concava, marginibus versus apicem convolutis, integris; *folia ramorum floriferorum* minora, appressa, planiuscula, *omnia* basi in caulem fibroso-decurrentia, oblonga, subulato-acuminata, 4-5 mm. longa et 1-1.3 mm. lata, nervo distinto, in basi tertiam partem folii latitudinis occupante, in sectione transversali e strato medio cellularum magnarum et pluribus stratis stereidarum ventralium et dorsalium composita, dorso levi, haud lamellosa, ad apicem breviter excurrente; *folia comalia* rosaceo-congesta, latiora, nervo longe excurrente; cellulis valde incrassatis, lumine angusto, rhombeolinearibus, inferioribus sensim longioribus, ad marginem angustioribus, hyalinis, alaribus distinctis, numerosis, ventricosis, bina strata efficientibus, plerisque quadratis, hyalinis vel fuscocrescentibus, robustis. *Perichaetia* aggregata; bractae externae minores, lanceolato-acuminatae, internae e basi longissime vaginantes subito setaceae, nervo longe excurrente, hyalino, parcissime denticulato. *Seta* in modum colli cygnei curvata, ca. 4 mm. alta, nigrescens, ad apicem tuberculosa; theca aequalis, ovali-cylindracea, sicca leviter et parce sulcata; *annulus* latus, duplex; *operculum* conico-subulatum, parum obliquum. *Calyptra* cuculliformis, basi irregulariter fimbriata. *Peristomii dentes* longiusculi, in conum conniventes, profunde bifidi, inferne indistincte trabeculato-rugosi, cruribus granulosis. *Sporae* globosae, viridulae, leves, 12-15  $\mu$  diam., sporodermi distincta (M. Fleischer in *Nova Guinea*, 8, Bot.: 739; 1912).

Dioecous; feminine flowers terminal and by renewed growth lateral, aggregated; archegonia elongated. *Plants* loosely tufted, robust, somewhat glossy, deeply blackish, at the apices yellow-green, 3-6 cm. high. *Stem* erect, a little flexuose, sparingly divided or dichotomously branched, below rustily tomentose, densely leafy, towards the flowering apex filiform-attenuate undivided, at the apex thickened into a head; sterile branches more robust, acuminate. *Cauline leaves* when dry erect or curved-incumbent to the stem, here and there slightly rugose, when moist erect-spreading concave, with the margins towards the apex convolute, entire; *leaves of the flowering branches* smaller, appressed, fairly flat, *all* at base decurrent on the stem oblong subulate-acuminata, 4-5 mm. long and 1-1.3 mm. broad, with the nerve distinct, at base occupying a third of the width of the leaf, in vertical section composed of a middle layer of large cells and several layers of ventral and dorsal stereids, on the back smooth, not lamellate, at the apex shortly excurrent; *comal leaves* crowded like a rose, broader, with the nerve long-excurrent; with the cells strongly thickened, with a narrow central cavity rhombic-linear, the lower ones gradually longer, at the margin narrower, hyaline, the alar ones distinct, numerous, swollen, forming two layers, most of them quadrate, hyaline or somewhat dusky, robust. *Perichaetia* crowded; outer bracts smaller, lanceolate-acuminata, inner ones very long sheathing from the base then suddenly setaceous, with the nerve long excurrent hyaline very sparsely denticulate. *Seta* curved in the manner of a swan's neck, about 4 mm. high, blackish, at the apex tuberculose; *capsule* even, oval-cylindric, in a dried state lightly and sparingly furrowed; *annulus* broad, double; *operculum* conic-subulate, slightly oblique; *Calyptra* hood-shaped, at base irregularly

fimbriate. *Peristome teeth* rather long, connivent into a cone, deeply bifid, below indistinctly trabeculate-rugose, with the crura granular. *Spores* globose, greenish, smooth, 12-15  $\mu$  in diameter, with distinct sporoderm.

**Rhynchostegiella opacifolia** Dixon (Brachytheciaceae)

*Caespites* densi sed faciliter dilabiles, *fusci*; caules prostrati, dense ramosi, ramis erectis, longis (1 cm. vel ultra), robustiusculis. *Folia* sat conferta, erecto-patentia vel leniter secunda, majuscula, caulinata 1-1.25 mm. longa, 0.4 mm. lata, ovato-lanceolata, saepe convoluta, late breviter acuminata, *obtusa*; ramea minora, magis ovalia; *omnia* sicca plus minusve anguste convoluta; margines plani, a parte inferiore folii ad apicem *arcte subobtuse pellucide* denticulati. *Costa* validiuscula, superne attenuata, supra medium folium soluta. *Cellulae peropacae, angustissimae, parietibus tenuibus obscuris*; *marginales* saepe *pellucidiores*; versus basim paullo latiores, infimae subrectangulares, *ala* *paucae vel nullae, omnes obscurae*.

*Autoica*. *Perichaetium* parvum, bracteis paucis, e basi lata cito in acumen flexuoso subulatum integrum constrictis. *Seta* 1.25 cm. alta vel paullo ultra, *laevis*. *Theca* turgide ovalis, sicca deoperculata angustior, asymmetrica, inclinata, pachydermica, saturate fusca, deoperculata 1.5 mm. longa; *operculum* curvirostratum (H. N. Dixon in *J. Linn. Soc. London*, Bot., 50: 111; 1935).

*Tufts* dense but easily broken asunder, *blackish-brown*; stems prostrate, densely branched, with branches erect, long (1 cm. or more), fairly robust. *Leaves* moderately crowded, erect-spreading or slightly secund, fairly large, the caulinata ones 1.25 mm. long, 0.4 mm. broad, ovate-lanceolate, often convolute, broadly shortly acuminate, *obtuse*; those of branches smaller, more oval; all when dry more or less narrowly convolute; margins flat, from the lower part of the leaf up to the apex *closely almost obtusely transparently* denticulate. *Midrib* fairly stout, attenuate upwards, vanishing above the middle of the leaf. *Cells* *very opaque, extremely narrow, with thin obscure walls*; *the marginal ones often more transparent*; towards the base a little broader, the lowest almost rectangular, *the alar ones few or none, all obscure*.

*Autoicous*. *Perichaetium* small, with the bracts few, from a broad base suddenly constricted into a flexuose subulate entire acumen. *Seta* 1.25 cm. high or a little more, *smooth*. *Capsule* in a turgid state oval, when dry and deoperculate narrower, asymmetric, inclined, pachydermous, deep blackish-brown, deoperculate 1.5 mm. long; *operculum* with a curved beak.

**Sphagnum thailandense** B. Hansen (Sphagnaceae)

*Planta* *fusca, habitu Sphagni imbricati similis*.

*Epidermis caulinata* stratis 2, efibris, pariete exteriore cellularum superficialium saepe foramine uno instructo. *Cylindrus* *lignosus rufofuscus*.

*Folia caulinata* ovalia ad lingulato-spathulata, 1.4-2.6 mm. longa, ad medianum partem 0.9-1.6 mm. lata, multifibra, plerumque marginibus lateraliibus supercurva, apice dentata, limbo deorsum angusto. *Cellulae*

*hyalinae* non septatae vel raro uniseptatae, in interiore superficie poris veris, praeter inferiores manifesto anulatis, suborbicularibus, ad commissuras et in cellularum angulis dispositis, in dorso foliorum orbicularibus, sursum manifesto anulatis, deorsum cellulas latitudine aequantibus, vix anulatis, series 2 vel rarius 3 subcontinuas formantibus, duabus ad commissuras dispositis instructae.

*Fasciculi ramorum* e ramis 2-3 compositi, omnibus plus minus extensis, tertio ceteris multo breviore vel plane deficiente. Parietes radiales cellularum epidermaticarum in quarta parte apicali fibrosi porosi, praeterea porosi solum, tangentiales fibris ut poris destituti.

*Folia ramulina* imbricata, ovalia, valde cava, 1.0-1.8 mm. lata, 1.5-2.4 mm. longa, multifibra et multipora, sulco resorptorio instructa, in interiore superficie poris veris orbicularibus, anulatis, ad commissuras et in cellularum angulis dispositis et plerumque pseudoporis minutissimis bene anulatis in medio cellularum sitis instructa, in dorso poris similibus sed crebrioribus, in series ad commissuras dispositis. *Cellulae chlorophylliferae* in sectione transversali anguste fusiformes vel oriformes, utrinque liberae. *Cellulae hyalinae* intus in pariete cum chlorophylliferis communi laeves (B. Hansen in *Dansk Bot. Ark.*, 20: 102; 1961).

Plant brownish, in habit similar to *Spagnum imbricatum*.

*Cauline epidermis* with 2 layers not fibrous, with the outer wall of the superficial cells often provided with one foramen (large pore). *Cylinder* woody reddish-brown.

*Cauline leaves* oval to lingulate-spathulate, 1.4-2.6 mm. long, at the middle part 0.9-1.6 mm. broad, many-fibred, usually at the lateral margins incurved above, at the apex toothed, with the limb narrowed towards the base. *Hyaline cells* not septate or seldom uniseptate, provided on the inner face with almost orbicular true pores manifestly ringed except the lower ones, placed at commissures and in the angles of cells, on the back of the leaves orbicular, above manifestly ringed, downwards equalling the width of the cells, scarcely ringed, forming 2 or rarely 3 almost continuous rows, with two placed at the commissures.

*Fascicles of branches* formed from 2 or 3 branches, all more or less outspread, with the third one much shorter than the others or completely lacking. Radial walls of the epidermal cells on the apical fourth part fibrous, porose, beyond this only porose, the tangential walls destitute of fibres and pores.

*Branch leaves* imbricate, oval, markedly hollow, 1.0-1.8 mm. broad, 1.5-2.4 mm. long, many-fibred and many-pored, provided with absorption furrow, on the inner face provided with orbicular ringed pores placed at the commissures and in the angles of the cells and often with well ringed very minute pseudopores situate in the middle of the cells, the dorsal pseudopores similar to pores but more crowded together, arranged in rows at the commissures. *Chlorophyll cells* in transverse section spindle-shaped or barrel-shaped, free on both sides. *Hyaline cells* inside on the wall common to them and to the chlorophyll cells smooth.

## PTERIDOPHYTA

### *Cyathea cucullifera* Holttum (Cyatheaceae)

*Frondes* 8 vel 10, c. 175 cm. longae, verticillatae, verticillis duobus dispositae. *Stipes* 15 cm. longus, verrucosus, omnino paleis vestitus; paleae maximae 2 cm. longae,  $\frac{1}{2}$  mm. latae, atrobrunneae, nitidae, margine pallido setiferae (setae nigrae flexuosa); paleae minores superficie abaxialis stipitis atrobrunneae, irregulares, interdum apice setiferae. *Rachis* infra pallida, verruculosa, paleis minimis pallidis ciliatis (non setiferis) conspersis praedita. *Pinnae* infimae 5 cm. longae, superiores sensim longiores, maximae 30 cm. longae. *Pinnulae* sessiles, breve acuminatae, ad 4 cm. longae, steriles 10 mm., fertiles 6-8 mm. latae, fere ad costam lobatae, segmento infimo non libero; costulae inter se 3 mm. (steriles) vel 2- $\frac{1}{2}$  mm. (fertiles) distantes; segmenta laminae contigua, firma, fere integra, apice rotundata; venae 8-9-jugatae (steriles), 6-8-jugatae (fertiles). *Sori* indusiat; indusia hemiteliiformia, cucullata, dorso costulam tangentia, pallide brunnea; paraphyses tenues, breves. *Raches* *pinnarum* infra pallidae, hirsutae, pilis crispatis coarctis, paleis minutis ciliatis et paleis elongatis planis setiferis intermixtis; *costae* infra basin versus paleis angustis setiferis caducis, omnino paleis minutis ciliatis pilisque crispatis, apicem versus paleis pallidis bullatis vestitae; *costulae* infra paleis minutis paleisque parvis bullatis vestitae (R. E. Holttum in *Kew Bull.* 16: 54; 1962).

*Fronds* 8 or 10, about 175 cm. long, verticillate, disposed in two whorls. *Stipes* 15 cm. long, verrucose, entirely clothed with scales; largest scales 2 cm. long, 0.5 mm. broad, dark brown, glossy, at the pale margin setiferous (the setae black flexuous); smaller scales of the abaxial surface of the stipe dark brown, irregular, sometimes at the apex setiferous. *Rachis* below pale, verruculose, provided with very small pale ciliate (not setiferous) scattered scales. Lower *pinnae* 5 cm. long, upper gradually longer, the largest 30 cm. long. *Pinnules* sessile, shortly acuminate, to 4 cm. long, the sterile ones 10 mm. the fertile ones 6-8 mm. broad, lobed almost to the costa with the lowest segment not free; costules between themselves 3 mm. (sterile) or 2-2.5 mm. (fertile) apart; segments of the blade touching, firm, almost entire, at the apex rounded; veins in 8-9 pairs (sterile), 6-8 pairs (fertile). *Sori* indusiate; indusia like those of *Hemitelia*, hooded, at their backs touching the costule pale brown; paraphyses thin, short. *Raches* of pinnae pale below, hirsute, with curled hairs pressed together, minute ciliate scales and elongated flat setiferous scales intermixed; *costae* on the lower side towards the base clothed with narrow setiferous soon-falling scales, throughout with minute ciliate scales and curled hairs, towards the apex with pale more or less bullate scales; *costulae* on the lower side clothed with minute scales and small bullate scales.

### *Elaphoglossum urbanii* Brause (Polypodiaceae)

*Rhizoma* repens, cr. 2 mm. crassum, paleis clathratis peltatis fuscis brunneo-maculatis e basi rotundata lanceolatis acuminatis ciliatis, 0.5 cm.

longis, 1.5 mm. latis munitum, folia bifaria interstitiis 0.3-1.2 cm. longis emittens. *Petioles* ochracei basi brunnei paleis iis rhizomatis aequalibus sparse praediti, torti, sterilium foliorum 2.7-5 cm., fertilium 9-23.5 cm. longi. *Lamina* coriacea oblongo-lanceolata margine revoluto, supra glabra, infra juventute paleis clathratis parvis brunneis laceratis instructa, foliorum sterilium usque ad 10 cm. longa, 1.5 cm. lata, fertilium 10 cm. longa, 1.7 cm. lata; nervis inconspicuis liberis dichotomis. *Sori* totam laminam occupantes, sporis bilateralibus lutescentibus cristis praeditis margine granulosis (G. Brause in Urban, *Symb. Ant.* 7: 488; 1913).

*Rhizome* creeping, about 2 mm. thick, furnished with clathrate peltate dark brown-spotted from the rounded base lanceolate acuminate ciliate pales 0.5 cm. long, 1.5 mm. broad, putting forth two-rowed leaves at intervals 0.3-1.2 cm. long. *Petioles* ochraceous at base brown sparsely provided with pales equalling those of the rhizome, twisted, of the sterile leaves 2.7-5 cm., of the fertile ones 9-23.5 cm. long. *Blade* coriaceous oblong-lanceolate with revolute margin, above glabrous, below in youth provided with clathrate small brown lacerate pales, of the sterile leaves up to 10 cm. long, 1.5 cm. broad, of the fertile ones 10 cm. long, 1.7 cm. broad; with the nerves inconspicuous free dichotomous. *Sori* occupying the whole blade, with spores two-sided yellowish provided with crests and at the margin granular.

*Notholaena delicatula* Maxon & Weatherby (Polypodiaceae)

Plerumque gracilis. *Rhizoma* breve erectum vel obliquum, frondes plures dense caespitosas emittens, paleis tenuibus brunneis concoloribus linearis-subulatis longe acuminatis circa 4 mm. longis 0.8 mm. latis integris, cellulis elongatis parietibus tenuibus, onustum. *Stipes* castaneus gracilis teres glaber subnitidus laminam subaequans. *Lamina* plerumque deltoidea fere aequilateralis tripinnata vel inferne subquadripinnata. *Rachis* costaeque stipiti similes. *Pinnae* *majores* circa 5-jugae remotae oblongae vel deltoideae petiolatae. *Pinnulae* structura pinnis similes remotae. *Pinnulae* *ultimae* in pedicellis brevibus castaneis articulatae, tenuiter herbaceae 4 mm. vel minus longae, pagina superiore minute glanduliferae, inferiore granis ceraceis albidis minutissimis discretis copiose praeditae, subintegrae vel minute irregulariterque crenatae, margine non revoluto; *laterales* oblongae vel ovatae vel inaequilateriter rhomboideae, apice obtusae, basi subtruncatae vel late cuneatae; *terminales* vel eorum lobi centrales rhomboideae vel fere flabelliformes, saepe in basin angustam ex comparatione longam sicut petiolum abrupte contractae. *Nervillae* evidentes tenues liberae pinnatae 1-3-furcatae e costula angulo acuto egredientes, fere per totam longitudinem sporangiferae. *Sporangia* brevissime stipitata, annulo e cellulis circa 20 composito. *Sporae* brunneae sphaericae jugis tenuibus flexuosis fuscis rugosae, diametro ca. 50  $\mu$  (W. R. Maxon & C. A. Weatherby in *Contr. Gray Herb. Harvard Univ.*, 127: 7; 1939).

Commonly slender. *Rhizome* short erect or oblique, putting forth many densely tufted fronds, laden with thin brown uniformly coloured linear-subulate long-acuminate about 4 mm. long 0.8 mm. broad entire pales, with

elongated cells with thin walls. *Stipe* chestnut-brown slender terete glabrous almost glossy almost equalling the blade. *Blade* commonly deltate nearly equilateral tripinnate or below almost quadripinnate. *Rachis* and *midrib* similar to the stipe. *Larger pinnae* about 5-paired remote oblong or deltate petioled. *Pinnules* in structure similar to the pinnae remote. *Ultimate pinnules* articulate with short chestnut-coloured pedicels, thinly herbaceous 4 mm. or less long, at the upper surface minutely gland-bearing, at the lower with waxy whitish very minute separate grains copiously furnished, almost entire or minutely and irregularly crenate, with the margin not revolute; the *lateral* ones oblong or ovate or unequal-sidedly rhombic, at the apex obtuse, at the base almost truncate or broadly cuneate; the *terminal* ones or the central lobes of these rhombic or nearly fan-shaped, often into a narrow comparatively long base petiole-like abruptly contracted. *Nervillae* evident thin free pinnate 1-3-forked going out from the costule at an acute angle, for nearly the whole length sporangium-bearing. *Sporangia* very shortly stipitate, with an annulus composed from about 20 cells. *Spores* brown spherical rugose with thin flexuous dark ridges, in diameter about 50  $\mu$ .

*Polypodium polypodioides* (L.) Watt (Polypodiaceae)

*Rhizoma* repens, paleis adpressis, lanceolato-subulatis, rigidis, tenuiter ciliatis vel glabris onustum; *folia* subcoriacea; *petiolus* 1-4" longus; *lamina* 2-5" longa, supra paleis ovatis vel rotundatis denticulatis in setam terminalem productis sparse obsita, denique glabra, infra una cum petiolo paleis membranaceis ad insertionem infuscatis rotundatis vel ovatis obtusis vel acuminatis integris vel denticulatis dense squamosa, ovato-oblonga, profunde pinnatipartita; *laciniae*  $\frac{1}{2}$ -1" longae,  $1\frac{1}{2}$ -2" latae, e basi versus apicem decrescentes vel infimae paullulum abbreviatae, basi superiore latiore, inferiore attenuata et decurrente adnatae et ala angusta confluentes, elongato-oblongae, obtusae vel lanceolato-oblongae, plerumque integerrimae; *sori* impressi, plerumque partem superiorem laciniarum occupantes, utrinque ad costulam 4-6, margini approximati, squamis circumdati (G. H. Mettenius, *Über einige Farngattungen* 1 (*Polypodium*) 69; 1856).

*Rhizome* creeping, laden with appressed lanceolate-subulate rigid finely ciliate or glabrous pales; *leaves* subcoriaceous; *petiole* 1-4 inches long; *blade* 2-5 inches long, on the upper side sparsely covered with ovate or rounded denticulate pales drawn out into a terminal bristle, at length glabrous, on the lower side together with the petiole densely scaly with membranous at insertion darkened rounded or ovate obtuse or acuminatae entire or dentate pales, ovate-oblong, deeply pinnatipartite; *segments* (*laciniae*),  $\frac{1}{2}$ -1 inch long,  $1\frac{1}{2}$ -2 lines broad, from the base towards the tip diminishing or on the lower ones a little abbreviated, at the base with the upper broader, the lower attenuately and decurrently adnate and by a narrow wing confluent, elongate-oblong, obtuse or lanceolate-oblong, very frequently quite entire; *sori* impressed, mostly occupying the upper part of the segments, on both sides at the costule (*costula*) 4-6, near to the margin, surrounded by scales.

# SPERMATOPHYTA

## GYMNOSPERMAE

*Abies georgei* Orr (Pinaceae)

Arbor 40-70-pedalis; *ramuli* annotini dense ferrugineo-villosi, vetustiores nigrescentes, longe fissi; *cicatrices* circulares; *gemmae* ovatae, obtusae, valde resinosa; *perulae* late ovatae, obtusae, persistentes per annos, ramulorum bases cingentes. *Folia* spiraliter inserta, pectinatim disposita, basi distincte constricta, margine leviter revoluta, apice plerumque emarginata, rare acuta vel obtusa, 15-25 mm. longa et 2 mm. lata, supra distincte canaliculata, subtus carinata et faciebus [*recte fasciis*] latis albis binis stomatiferis praedita; canales resiniferi marginales; hypodermis in facie ventrali continua crassa, in facie dorsali tantum sub costa et in marginibus praesens. *Amenta mascula* apicem versus ramulorum aggregata, manifeste stipitata, 30 mm. longa. *Strobili maturi* violaceo-brunnei, ovati, sessiles, circa 9 cm. longi et 4-5 cm. lati, leviter resinosi; *squamae* late obovato-cuneatae, 2 cm. longae et 2 cm. latae, basi leviter auriculatae, stipitatae, apice rotundatae paulo incurvatae, extus brunneo-tomentosulae; *bracteae* oblongae et manifeste exsertae, apice triangulari erecto et margine erosa, cuspide 6 mm. longo erecto vel recurvo; *semina* circa 1 cm. longa et 5 mm. lata, alis squamam aequantibus nitidis brunneis, 5 mm. longis et 1 cm. latis (M. Y. Orr in *Notes R. Bot. Gard. Edinburgh*, 18: 1; 1938).

Tree 40-70 feet; *branchlets* of current year densely rusty-red-villous, the older ones blackish, long-fissured; *scars* circular; *buds* ovate, obtuse, strongly resinous; *bud-scales* broadly ovate, obtuse, persisting through the years, surrounding the bases of the branchlets. *Leaves* spirally inserted, pectinately arranged, at the base distinctly narrowed, at the margin lightly revolute, at the apex commonly emarginate, rarely acute or obtuse, 15-25 mm. long and 2 mm. broad, above distinctly channelled, below keeled and provided with two white broad stomata-bearing bands; resin-bearing canals (resin-ducts) marginal; hypoderm on the ventral surface continuous thick, on the dorsal surface present only under the midrib and at the margins. *Male amenta* crowded towards the apex of the branchlets, manifestly stipitate, 30 mm. long. *Mature cones* violet-brown, ovate, sessile, about 9 cm. long and 4-5 cm. broad, lightly resinous; *scales* broadly obovate-cuneate, 2 cm. long and 2 cm. broad, at the base slightly auriculate, stipitate, at the apex rounded a little incurved, externally brown-tomentulose; *bracts* oblong and manifestly exserted, with the apex triangular erect and the margin erose, with the cusp 6 mm. long erect or recurved; *seeds* about 1 cm. long and 5 mm. broad, with glossy brown wings equalling the scale, 5 mm. long and 1 cm. broad.

## ANGIOSPERMAE: DICOTYLEDONES

*Eupatorium jenssenii* Urban (Compositae)

Frutex. *Rami* teretes multistriati pilis brevissimis sursum curvatis nigrescentibus dense obsiti. *Folia* opposita, raro hinc illinc subalterna, 5-10 mm. longe petiolata, triangulari- v. ovato-lanceolata, basi subtruncata, non v.

vix in petiolum protracta, superne sensim et longe acuminata, apice ipso acuto, 4-8 cm. longa, 1.5-3.5 cm. lata v. in ramulis minora, e basi v. perpaullo supra basin 3- v. sub-5-nervia, nervis 2 intermediis usque ad v. supra medium productis, omnibus supra prominulis et ope venarum subhorizontalium grosse anastomosantibus, margine depresso crenata, crenis minute et obtuse apiculatis, supra glabra, subtus ad nervos obsolete pilosula, et glandulis minutissimis pellucidis obsita. *Inflorescentiae* axillares et terminales paniculam amplam formantes, speciales subcorymbosae 4-5 cm. diametro; bracteae inferiores euphyloideae lanceolatae parcissime serratae v. integrae 1.5-0.7 cm. longae, caeterae lineares v. sublineares; pedicelli 0-4 mm. longi. *Involucri* squamae biseriatae, cr. 9 valde inaequilongae, pleraeque anguste lanceolatae 3-nerves 1-2 mm. longae, interiores 1-2 inferne anguste lineares, supra medium latiores 1-3-nerves usque 3 mm. longae. *Flores* 5-6 in capitulo. *Pappi setae* 24-27 sordide albidae 2.5 mm. longae. *Corollae* 3 mm. longae; tubus cylindraceus superne sensim usque dimidio ampliatus; lobi triangulares tubo 7-8-plo breviores. *Antherae* 1 mm. longae, ligula semiorbiculari loculis 8-plo breviore. *Stylus* 5.5 mm. longus, infra medium bifidus. *Achaenia* (non plane matura) 2.5 mm. longa, parce brevissimeque pilosa (I. Urban in *Ark. f. Bot.*, 17 no. 7: 64; 1921).

Shrub. *Branches* terete multistriate densely covered with very short upwards curved blackish hairs. *Leaves* opposite, rarely here and there almost alternate, with petiole 5-10 mm. long, triangular- or ovate-lanceolate, at base almost truncate, not or scarcely prolonged into a petiole, above gradually and long acuminate, at the tip itself acute, 4-8 cm. long, 1.5-3.5 cm. broad or smaller on the branches, from the base or a very little above the base 3- or almost 5-nerved, with the 2 intermediate nerves prolonged up to or above the middle, all prominent above and by means of the almost horizontal veins coarsely anastomosing, at the margin depressed crenate, with the crenae minutely and bluntly apiculate, glabrous above, below obsoletely pilosulous at the nerves, and covered with very minute pellucid glands. *Inflorescences* axillary and terminal forming an ample panicle, the individual ones subcorymbose 4-5 cm. in diameter; lower bracts resembling true leaves lanceolate most sparingly serrate or entire 1.5-0.7 cm. long, the rest linear or almost linear; pedicels 0-4 mm. long. *Scales* of the involucre in two series, about 9 very unequal, most of them narrowly lanceolate 3-nerved 1-2 mm. long, the inner ones below narrowly linear, above the middle broader 1-3-nerved up to 3 mm. long. *Flowers* 5-6 in a capitulum. *Bristles of the pappus* 24-27 dirty white 2.5 mm. long. *Corollas* 3 mm. long; tube cylindric above gradually up to halfway enlarged; lobes triangular 7-8 times shorter than the tube. *Anthers* 1 mm. long, with the semicircular ligule 8 times shorter than the locules. *Style* 5.5 mm. long, below the middle bifid. *Achenes* (not completely mature) 2.5 mm. long, sparingly and very shortly pilose.

*Ranunculus longipetalus* Handel-Mazzetti (Ranunculaceae)

Perennis, rhizomate brevi tenui descendente, radicibus filiformibus elongatis, fibris tenuissimis. *Caulis* ½-10 cm. longus, erectus vel ascendens vel subprocumbens, nudus vel 1-2-folius, glaber vel sparse pilosulus, uniflorus.

*Folia basalia* ambitu reniformia vel pentagona vel ovata, 3-10 mm. lata et aequilonga vel paulo longiora, basi saepe cordata necnon truncata usque cuneata, tripartita usque trisecta, parte (scil. foliolo) medio obovato integro vel 3-5 lobo, interdum graciliter petiolulato, foliolis lateralibus illi similibus vel 2-4-lobis usque 2-4-partitis, lobis ultimis semiobicularibus et rotundatis usque lanceolatis et acutis, crassiuscula, glabra; *petiolus* lamina aequilongus vel usque 4 plo longior, basi in vaginam brunnescentem 1-2 mm. latam sensim dilatatus; *folium caulimum inferius* foliis basalibus simile, sed brevius petiolatum, *superius* trisectum, segmentis lanceolatis integris. *Pedicellus* 0-8-5 cm. longus. *Flos* luteus, c. 1 cm. diametro. *Sepala* elliptica vel obovata, c. 3 mm. longa, glabra, interdum violaceo-suffusa. *Petala* 5, anguste elliptica, 5 mm. longa et 1½-2 mm. lata, anguste rotundata, basi in unguis fere 1 mm. longos cuneato-angustata, nectario patelliformi minutissimo. *Nucularum capitulum* globosum, c. 2 mm. diametro, receptaculo glabro. *Nuculae* immaturae obovoideae, vix 1 mm. longae, compressae, glabrae, in rostra tenuia iis fere aequilonga leviter curvata subito constrictae (H. Handel-Mazzetti in *Acta Horti Gothoburg.*, 13: 160; 1939).

Perennial, with rhizome short thin descending, roots thread-like elongated, fibres very thin. *Stem* ½-10 cm. long, erect or ascending or almost procumbent, naked or 1-2-leaved, glabrous or sparsely pilosulous, one-flowered. *Basal leaves* in outline reniform or pentagonal or ovate, 3-10 mm. broad and just as long or a little longer, at the base often cordate also truncate to cuneate, tripartite to trisect, with the middle part (that is to say leaflet) obovate entire or 3-5-lobed, sometimes slenderly petiolulate, with the lateral leaflets similar to it or 2-4-lobed to 2-4-parted, with the ultimate lobes semicircular and rounded to lanceolate and acute, somewhat thick, glabrous; *petiole* as long as the blade or up to 4 times longer, at base gradually expanded into a brownish sheath 1-2 mm. broad; *lower stem leaf* similar to basal leaves but more shortly petioled, the *upper* one trisect, with entire lanceolate segments. *Pedicel* 0-8-5 cm. long. *Flower* yellow, about 1 cm. in diameter. *Sepals* elliptic or obovate, 3 mm. long, glabrous, sometimes violet-suffused. *Petals* 5, narrowly elliptic, 5 mm. long and 1½-2 mm. broad, narrowly rounded, at base cuneately narrowed into claws almost 1 mm. long, with a most minute patelliform nectary. *Head of nutlets* globose, about 2 mm. in diameter, with the receptacle glabrous. *Immature nutlets* obovoid, scarcely 1 mm. long, compressed, glabrous, suddenly constricted into a slender lightly curved beak almost as long as these.

#### Reseda luteola L. (Resedaceae)

Monotoca, glabra. *Radix* fusiformis flexuosa albens. *Caulis* 6-7½ dcm., elatus saepius solitarius virgato-ramosus vel subsimplex fistulosus striatus stricte erectus foliosus leviter angulatus virens; rami pauci vel plures erecti. *Folia* 5-7 cm. × 8-12 mm., linearis- vel spathulato-lanceolata vel lorata integra obtusa plana; basilaria autem anni primi rosulata oblanceolata margine undulata. *Racemi* elongati densiflori. *Bracteae* 2½-3½ mm., demum ad 5 mm., e basi lata triangulari subulatae, praeter nervum viridem pallidae subhyalinae, in apice racemorum comoso-exsertae. *Flores* 4½ mm. diam.

*Calycis laciniae* persistentes; 2 superiores profundius inter se liberae, oblongo-ovatae obtusae anguste hyalino-marginatae, 2 mm., corollae adpressae. *Corolla* calyce parum longior; petala luteola, superius ex appendice transverse ovali ambitu cuneato-ovatum, fere ad medium 5-7-partitum, lateralia trifida vel interdum bipartita, petalum inferum autem ad lobum intermedium superioris reductum vel utrinque magis minute unilobum (vel interdum 2 infera). *Nectarium* squamiforme crenatum viridulum. *Stamina* circiter 25 (20-25), i.e. 20 vel ultra, petalis longiora; filamenta subulata glabra persistentia; antherae tantum ½-¾ mm. luteae. *Stigmata* virentia. *Ovula* ad quamque placentam circiter 10. *Capsula* 5 mm. longa, 6 mm. lata, breviter stipitata brevis campanulata ambitu subhexagona depresso-obovoidea, ad ¼ tricornis, cornibus conniventibus acutis incrassatis, profunde 3-4-sulcata, transverse rugosa, late aperta; placentae superne bilobae. *Semina* 1 mm., rotundo-reniformia fuscato-nigra nitida (F. N. Williams, *Prodr. Fl. Brit.*, 1: 599; 1912). See p. 145, Fig. 8.

Monocarpic, glabrous. *Root* fusiform flexuous white. *Stem* 6-7½ dm., tall often solitary virgately branched or almost unbranched hollow striate tightly erect leafy lightly angled green; branches few or many erect. *Leaves* 5-7 cm. × 8-12 mm., linear- or spathulate-lanceolate or lorate entire blunt flat: basal ones of the first year on the other hand rosetted oblanceolate at the margin undulate. *Racemes* elongated densely flowered. *Bracts* 2½-3½ mm., at length 5 mm., subulate from a broad triangular base, pale almost hyaline except for the green nerve, at the apex of the racemes sticking out as a tuft. *Flowers* 4½ mm. in diameter. *Segments of the calyx* persistent, the upper 2 more deeply free between themselves, oblong-ovate blunt narrowly hyaline-margined, 2 mm., appressed to the corolla. *Corolla* a little longer than the calyx; petals yellowish, the upper one from a transversely oval appendix in outline cuneate-ovate, almost to the middle 5-7-partite, the lateral ones 3-fid or sometimes 2-partite, the lower petal on the other hand reduced to the middle lobe of the upper or on each side more minutely 1-lobed (or sometimes 2 lower). *Nectary* scale-like crenate greenish. *Stamens* about 25 (20-25), i.e. 20 or more, longer than the petals; filaments subulate glabrous persistent; anthers only ½-¾ mm., yellow. *Stigmas* becoming green. *Ovules* at each placenta about 10. *Capsule* 5 mm. long, 6 mm. broad, shortly stipitate short campanulate in outline almost hexagonal depressed-obvoid, to ¼ three-horned, with the horns connivent acute thickened, deeply 3-4-furrowed, transversely rugose, widely open; placentas 2-lobed above. *Seeds* 1 mm., rounded-reniform brownish-black glossy.

#### Rostellularia linearifolia Bremekamp (Acanthaceae)

*Herba* erecta, circ. 20 cm. alta, sparse ramosa. *Internodia* sexangularia late sed haud profunde bisulcata, 2-5-6 cm. longa et 0-8-1-2 mm. diam., glabra, cystolithis brevibus dense albo-notata. *Folia* subsessilia, anguste linearis, 1-5-2-0 cm. longa et 1-2-1-4 mm. lata, apice basique acuta, margine revoluta, subcoriacea, utrimque glabra et laevia, supra cystolithis transverse lineolata, 1-nervia. *Spicae* pedunculo glabro 3-4 cm. longo elatae, rachide subglabra 2-5 cm. longa, nodo infimo a nodo secundo internodio calyci

aequilongo separato, internodiis sequentibus gradatim brevioribus. *Bracteae*, *bracteolae* et *calycis lobi* 4 majores similiores, subulati, 5-6 mm. longi, acuti, hyalino-marginati, margine et costa ciliati. *Rudimentum lobi calycini quinti* filiforme et hyalinum, 0.5-1.0 mm. longum, difficiliter distinguendum. *Corolla* alba, 6.5 mm. longa, extus labii inferioris apice pubescente excepto glabra, tubo 3.5 mm. longo, labio superiore apice bidentato, labio inferiore lobis rotundatis 0.7 mm. longis instructo. *Stamina* filamentis 3.0 mm. longis, thecis 0.8 mm. longis, superiore 0.5 mm. supra inferiorem inserta, inferiore calcare 0.8 mm. longo instructa; connectivum 0.4 mm. latum. *Granula pollinis* 28  $\mu$  longa, 17  $\mu$  lata, 15  $\mu$  crassa. *Ovarium* 1.3 mm. altum, dimidio superiore pilosulum. *Stylus* 4 mm. longus, dimidio superiore sparse hirtellus. *Capsula* 5.5 mm. longa et 1.7 mm. diam., apicem versus puberula, parte solida 1.2 mm. longa. *Semina* 0.8 mm. alta lataque, carunculata (C. E. B. Bremekamp in *Kon. Nederl. Akad. Wet. Amsterdam, Proc. C.*, 60: 5; 1957).

Herb erect, about 20 cm. high, sparsely branched. *Internodes* six-angled broadly but not deeply two-furrowed, 2.5-6 cm. long and 0.8-1.2 mm. in diameter, glabrous, densely white-marked with short cystoliths. *Leaves* almost sessile, narrowly linear, 1.5-2.0 cm. long and 1.2-1.4 mm. broad, at the apex and base acute, at the margin revolute, subcoriaceous, on both sides glabrous and smooth, on the upper side transversely marked with fine lines by the cystoliths, 1-nerved. *Spikes* elevated by a glabrous peduncle 3-4 cm. long, with the almost glabrous rachis 2.5 cm. long, with the lower node separated from the next node by an internode as long as the calyx, with the following internodes little by little shorter. *Bracts*, *bracteoles* and the 4 larger *lobes of the calyx* similar, subulate, 5-6 mm. long, acute, hyaline-margined, at the margin and midrib ciliate. *Rudiment of the fifth calycine lobe* thread-like and hyaline, 0.5-1.0 mm. long, to be distinguished with difficulty. *Corolla* white, 6.5 mm. long, glabrous outside except for the pubescent apex of the lower lip, with the tube 3.5 mm. long, with the upper lip at the apex bidentate, the lower lip provided with rounded lobes 0.7 mm. long. *Stamens* with filaments 3.0 mm. long, with thecae 0.8 mm. long, the upper one inserted 0.5 mm. above the lower one, the lower one provided with a spur 0.8 mm. long; connective 0.4 mm. broad. *Pollen grains* 28  $\mu$  long, 17  $\mu$  broad, 15  $\mu$  thick. *Ovary* 1.3 mm. high, on the upper half slightly pilose. *Style* 4 mm. long, on the upper half sparsely hirtellous. *Capsule* 5.5 mm. long and 1.7 mm. in diameter, towards the apex puberulous, with the solid part 1.2 mm. long. *Seeds* 0.8 mm. high and broad, carunculate.

#### *Salix dolichostachya Floderus* (Salicaceae)

*Frutex procerus vel arbor ad 6 m. alta. Ramuli annotini elongati 2.5-3.5 (-5, surculi -7) mm. crassi recti fusci glaberrimi basi striati, ramulis novellis foliatis, inferioribus 0.2, superioribus 1.2 (-4) et intermediis (amentiferis) c. 3-4 (-8) instructi. Ramuli novelli ad 2.5 mm. crassi glabri vel apice sparse brevihirsuti foliis vulgo 13-17 praediti. Stipulae parvae (in surculis ad 8 x 5 mm.) semicordatae cuspidatae serratae. Petioli c. 10 (7-20) mm. longi supra cano-hirsuti subtus glabri. Folia c. 70 x 25 (in surculis ad 160 x 55) mm. magna lanceolato-elliptica vel ovata acuta crenulato-dentata vel integerrima*

plana, nervis secundariis vulgo 15-25 regulariter arcuatis vix elevatis et reticulo parum distincto instructa, supra viridia (costa puberula excepta) glabra infra pallide glauca glaberrima vel (raro) in costa pilosa. *Amenta* subpraeococcia lateralia divaricata demum pendula, e gemmis ad 9 mm. longis ovoideis subacutis badiis glabris erumpentia, pedunculis 8-10 (3) vel c. 15 (2) mm. longis crassis cinereo-tomentosis et foliolis vulgo 2-3 suffulta, mascula c. 40 x 8, feminea c. 100 (-222) x 12 mm. magna. *Bracteae* c. 2.5 mm. longae in parte inferiore parce hirsutae, masc. ovatae rufae, femin. ovato-lanceolatae fulvae. *Nectaria* solitaria interna minuta (c.  $\frac{1}{3}$  mm.). *Stamina* duo libera c. 5 mm. longa flava in dimidia parte inferiore villosa vel glabra; antherae parvae ovato-rotundatae helvæ. *Pedicelli* c.  $\frac{3}{5}$  mm. longi parce pilosi vel glabri. *Capsulae* c. 6 (-9) mm. longae ovoideo-conicae fulvae glabrae vel basi subpuberulae. *Styli*  $\frac{1}{2}$ - $\frac{1}{2}$  mm. longi integri. *Stigmata* c.  $\frac{1}{3}$  mm. longa integra vel emarginata. *Pappus* albus, pilis subcurvatis; semina c. 8, 1.5 mm. longa (B. Floderus in *Geografiska Ann.*, 1935: 311; 1935).

Tall shrub or tree to 6 m. high. *Branchlets of last year's growth* elongated 2.5-3.5 (-5, shoots -7) mm. thick straight dark quite glabrous at base striate, furnished with leafy young branchlets, the lower 0.2, the upper 1.2 (-4) and the intermediate (catkin-bearing) about 3-4 (-8). *Young branchlets* to 2.5 mm. thick glabrous or at the apex sparsely short-hirsute commonly provided with 13-17 leaves. *Stipules* small (on shoots to 8 x 5 mm.) semicordate cuspidate serrate. *Petioles* about 10 (7-20) mm. long above canous-hirsute below glabrous. *Leaves* about 70 x 25 (on shoots up to 160 x 55) mm. large lanceolate-elliptic or ovate acute crenulate-dentate or quite entire flat, provided with secondary nerves commonly 15-25 regularly arcuate scarcely raised and with a not particularly distinct network, above green and glabrous (with the puberulous midrib excepted), below pale glaucous quite glabrous or (rarely) pilose on the midrib. *Catkins* almost precocious lateral very divergent at length pendulous, breaking forth from buds up to 9 mm. long ovoid almost acute reddish brown glabrous, supported by peduncles 8-10 (male) or about 15 (female) mm. long thick ash-grey-tomentose and with little leaves commonly 2-3, male catkins about 40 x 8, female about 100 (-222) x 12 mm. large. *Bracts* c. 2.5 mm. long in the lower part sparingly hirsute, male ovate reddish, female ovate-lanceolate tawny. *Nectaries* solitary internal minute (about  $\frac{1}{3}$  mm.). *Stamens* two free about 5 mm. long yellow in the lower half part villous or glabrous; anthers small ovate-rounded pale red. *Pedicels* about  $\frac{3}{5}$  mm. long sparingly pilose or glabrous. *Capsules* about 6 (-9) mm. long ovoid-conical tawny glabrous or at base somewhat puberulous. *Styles*  $\frac{1}{2}$ - $\frac{1}{2}$  mm. long entire. *Stigmas* about  $\frac{1}{3}$  mm. long entire or emarginate. *Pappus* white, with somewhat curved hairs; seeds about 8, 1.5 mm. long.

#### *Viburnum × hillieri Stearn* (Caprifoliaceae)

*Frutex semperfiores diffusus ad 2 m. altus et latus aestate florens. Ramuli hornotini laeves glabri vel pilis stellatis leviter aspersi, vetustiores glabri atrobrunnei; gemmae hemales anguste lanceolatae stellato-pilosae. Folia petiolata estipulata; lamina anguste elliptica apice breviter acuminata*

margine sparsim breviterque serrata basi obtusa 5-15 cm. longa 2-6 cm. lata laevis glabra vel infra pilis stellatis sparsim instructa, venis primariis utroque latere 4-5 supra impressis subter prominentibus pinnatum nervata; petiolus 7-15 mm. longus plerumque rubicundus. *Inflorescentia* lateralis pedunculata multiflora laxa conica subglabra vel minute pubescens 4.5-6 cm. longa 5-7 cm. lata, ramis horizontaliter patentibus. *Receptaculum* glabrum. *Calyx* glaber c. 1 mm. longus. *Corolla* regularis infundibuliformis alba glabra, tubo 4-5 mm. longo, ore vix 3 mm. diametro, lobis patentibus suborbicularibus c. 3 mm. longis. *Stamina* exserta ad apicem tubi corollae affixa, filamentis albis c. 2 mm. longis, antheris 1-2 mm. longis. *Drupa* late ellipsoidea c. 8 mm. longa 6 mm. diametro primum rubra demum nigra; putamen compressum 7 mm. longum 4.5 mm. latum 2 mm. crassum a ventre sulco lato profundo in longitudinem exaratum (Stearn in *J. R. Hort. Soc. London*, 81: 539; 1956).

*Shrub* evergreen diffuse to 2 m. high and broad flowering in summer. *Branchlets* of the current year smooth glabrous or lightly sprinkled with stellate hairs, the older ones glabrous black-brown; winter buds narrowly lanceolate stellate-pilose. *Leaves* petiolate without stipules; blade narrowly elliptic at the apex shortly acuminate at the margin sparsely and shortly serrate at the base obtuse 5-15 cm. long. 2-6 cm. broad smooth glabrous or underneath furnished sparsely with stellate hairs, pinnately nerved on both sides with 4-5 veins impressed above raised underneath; petiole 7-15 mm. long frequently reddish. *Inflorescence* lateral pedunculate many-flowered loose conical almost glabrous or minutely pubescent 4.5-6 cm. long 5-7 cm. broad, with branches horizontally spreading. *Receptacle* glabrous. *Calyx* glabrous about 1 mm. long. *Corolla* regular funnel-shaped white glabrous, with the tube 4-5 mm. long, the mouth scarcely 3 mm. in diameter, the lobes spreading almost orbicular about 3 mm. long. *Stamens* exserted attached to the top of the tube of the corolla, with white filaments about 2 mm. long, anthers 1-2 mm. long. *Drupe* broadly ellipsoid about 8 mm. long 6 mm. in diameter at first red later black; stone compressed 7 mm. long 4.5 mm. broad 2 mm. thick on the ventral side hollowed out lengthwise by a broad deep furrow.

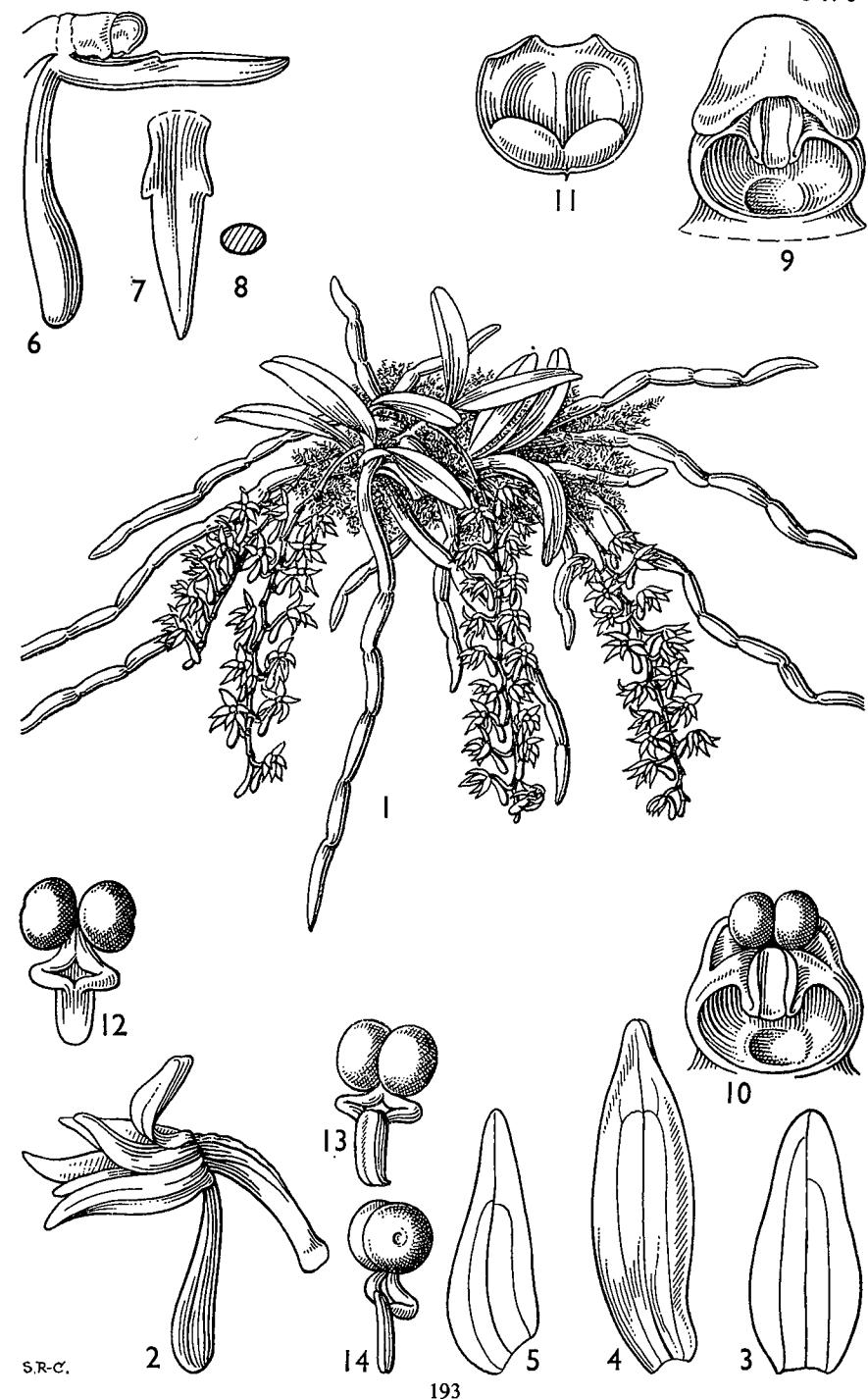
#### ANGIOSPERMAE: MONOCOTYLEDONES

##### *Angraecopsis breviloba* Summerhayes (Orchidaceae)

*Herba* epiphytica nana; *caulis* brevissimus, circiter 1 cm. longus, *radices* numerosissimas flexuosas simplices applanatas circiter 1.5-3 mm. latas dense

Fig 11 *Angraecopsis breviloba* Summerhayes

1, planta florens; 2, flos a latere visus; 3, sepulum intermedium; 4, sepulum laterale; 5, petalum; 6, labellum et columna a latere visa; 7, labelli lamina antice visa; 8, sectio transversa lobi intermedii labelli; 9, columna, anthera secta; 11, anthera subter visa; 12-14, pollinarium desuper subter et a latere visum (by Stella Ross-Craig, from Hooker's *Icones Plantarum*, 35; 1950)



emittens. *Folia* pauca, cito decidua, ligulata, usque ad 3 cm. longa et 5 mm. lata, apice obtusa brevissime bilobulata, obscure viridia. *Inflorescentiae* patentes vel adscendentibus, usque ad 7 cm. longae, dense multiflorae; pedunculus 1-2 cm. longus, vaginis paucis instructus; rhachis flexuosa, angulata; bracteae 2-4 mm. distantes, arcte vaginantes, obtusae vel acutae, 1-2.5 mm. longae. *Flores* secundi, patentes vel adscendentibus, pallide virides; pedicellus cum ovario circiter 4 mm. longus. *Sepalum intermedium* ± recurvatum, oblongo-lanceolatum, subacutum vel obtusum, 3-4.5 mm. longum, 1-1.5 mm. latum; *sepala lateralia* parallele porrecta, e basi angustata oblique curvatum lanceolata, acuta, 4.5-5 mm. longa, 1-1.5 mm. lata. *Petala libera*, oblique triangulari-lanceolata, acuta, 2.75-4 mm. longa, prope basin 1-1.5 mm. lata; omnia tepala trinervia. *Labellum* leviter incurvatum, dimidio inferiore breviter trilobatum, totum 3.75-4.5 mm. longum; lobe intermedium carnoso-subulatus, 2.5-3 mm. longus; lobi laterales dentiformes, subacuti, carnosus; calcar dependens vel leviter incurvatum, e basi angusta valde inflatum, 4.25-4.75 mm. longum, circiter 1 mm. diametro. *Columna* subteres, truncata, 0.65-1 mm. longa, androclinio leviter excavato; anthera hemisphaerica, antice truncata; pollinia ovoido-globosa, 0.5 mm. longa, stipitibus duobus genuflexis apice conniventibus, viscidio communi oblongo postice leviter retuso subtus concavo 0.6 mm. longo; rostellum leviter productum, porrectum, viscidio amoto bilobum, lobis obtusis. *Capsulae* ellipsoideae vel anguste pyriformi-ellipsoideae, 7-9 mm. longae, 2.5-4 mm. diametro, cum pedicello 2 mm. longo (V. S. Summerhayes in *Hooker's Icones Plantarum*, 35: t. 3490; 1950).

*Herb* epiphytic dwarf; stem extremely short, about 1 cm. long, giving out densely very numerous flexuous unbranched flattened roots about 1.5-3 mm. broad. *Leaves* few, quickly falling, lingulate, up to 3 cm. long and 5 mm. broad, at the apex blunt very shortly bilobulate, dull dark green. *Inflorescences* horizontal or ascending, up to 7 cm. long, densely many-flowered; peduncle 1-2 cm. long, provided with a few sheaths; rachis flexuous, angled; bracts 2-4 mm. apart, closely sheathing, blunt or acute, 1-2.5 mm. long. *Flowers* secund, horizontal or ascending, pale green; pedicel with the ovary about 4 mm. long. *Middle sepal* more or less recurved, oblong-lanceolate, somewhat acute or blunt, 3.4-5 mm. long, 1-1.5 mm. broad; *lateral sepals* parallelly extended, from the narrowed base obliquely curvately lanceolate, acute, 4.5-5 mm. long, 1-1.5 mm. broad. *Petals* free, obliquely triangular-lanceolate, acute, 2.75-4.5 mm. long, near the base 1-1.5 mm. broad; all tepals three-nerved. *Labellum* lightly incurved, the lower half shortly three-lobed, in all 3.75-4.5 mm. long; middle lobe fleshy subulate, 2.5-3 mm. long; lateral lobes tooth-shaped, almost acute, fleshy; spur hanging down or lightly incurved, from the narrow base strongly swollen, 4.25-4.75 mm. long, about 1 mm. in diameter. *Column* almost terete, truncate, 0.65-1 mm. long, with the androclinium lightly hollowed out; anther hemispherical, at the front truncate; pollinia ovoid-globose, 0.5 mm. long, with the stalks two genuflexed at the apex connivent, with the common viscidium oblong at the back lightly retuse beneath concave 0.6 mm.

long; rostellum lightly drawn out, extended, bi-lobed with viscidium removed, with the lobes blunt. *Capsules* ellipsoid or narrowly pyriform-ellipsoid, 7-9 mm. long, 2.5-4 mm. in diameter, with the pedicel 2 mm. long.

*Juncus grisebachii* Buchenau (Juncaceae)

Perennis, stolonifer; stolones validi. *Caulis* erectus, 20-50 cm. (raro 60 et ultra) altus, teres (vel superne subcompressus), foliatus, in statu sicco plus minus striatus. *Folia* basilaria 3-4 cataphyllina, sequens et 1-3 caulinata frondosa, caulinata caulem plerumque superantia. *Vagina* in auriculas duas longas obtusas producta; *lamina* teres, superne canaliculata, intus unitubulosa, septis transversis completis externe plus minus prominentibus intercepta. *Inflorescentia* terminalis, composita, bractea infima foliacea longe superata, caeteris plerumque brevioribus. *Capitula* 3 (raro 2) usque 6, erecto-patentia, magna (diametro ca 15 mm), 7-10 (raro 12) flora. *Bractae* florum omnes hypsophyllinae, membranaceae, lanceolatae, acutatae, floribus plerumque breviores. *Flores* magni (5-6 mm. longi), in axillis bractearum nudi, breviter pedunculati. *Tepala* membranacea, pallide straminea, trinervia, lanceolata, acuta, aequilonga, vel interna paullo longiora (externa interdum sub apice mucronata). *Stamina* sex, perigonum superantia; *filamenta* filiformia castanea, tepalis aequilonga (vel paullo longiora); *antherae* lineares, flavae, filamentis breviores, deciduae. *Pistillum* perigonum superans; *ovarium* trigonum elongato-ovatum; *stilus* filiformis, ovarium aequans; *stigmata* 3 longa, exserta, dextrorsum torta. *Fructus* perigonio longior, prismatico-ovatus, plus minus rostratus, fere trilocularis; pericarpium firmum nitidum, castaneum (raro pallide castaneum). *Semina* longissima, 2-3 (raro usque 4) mm. longa, scobiformia, alba, nucleo parvo flavo (F. Buchenau in Engler, *Bot. Jahrb.*, 6: 202; 1885).

Perennial, stoloniferous; stolons stout. *Stem* erect, 20-50 cm. (rarely 60 and more) high, terete (or above somewhat compressed), leafy, in a dried state more or less striate. *Basal leaves* 3-4 cataphyllary, the following one and 1-3 caulinata ones foliaceous, the caulinata ones commonly overtopping the stem. *Sheath* produced into two long obtuse auricles; *blade* terete, canaliculate above, inside one-tubed, intercepted by transverse complete externally more or less prominent septa. *Inflorescence* terminal, compound, long overtopped by the lowermost leafy bract, with the others mostly shorter. *Heads* 3 (rarely 2) to 6, erect-spreading, large (in diameter about 15 mm.), 7-10- (rarely 12-) flowered. *Bracts* of flowers all hypsophyllary, membranous, lanceolate, slightly acute, commonly shorter than the flowers. *Flowers* large (5-6 mm. long), naked in the axils of bracts, shortly pedunculate. *Tepals* membranous, palely straw-coloured, three-nerved, lanceolate, acute, equally long or the inner ones a little longer (the outer ones sometimes mucronate below the apex). *Stamens* six, overtopping the perigon; *filaments* filiform chestnut-coloured, equal in length to the tepals (or a little longer); *anthers* linear, yellow, shorter than the filaments, deciduous. *Pistil* overtopping the perigon; *ovary* three-angled elongate-ovate; *style* filiform, equalling the ovary; *stigmas* 3 long, exserted, twisted to the right. *Fruit* longer than the perigon,

prismatic-ovate, more or less beaked, almost three-locular; pericarp firm glossy chestnut-coloured (rarely pale chestnut-coloured). Seeds extremely long, 2-3 (rarely up to 4) mm. long, sawdust-like in appearance, white, with a small yellow nucleus.

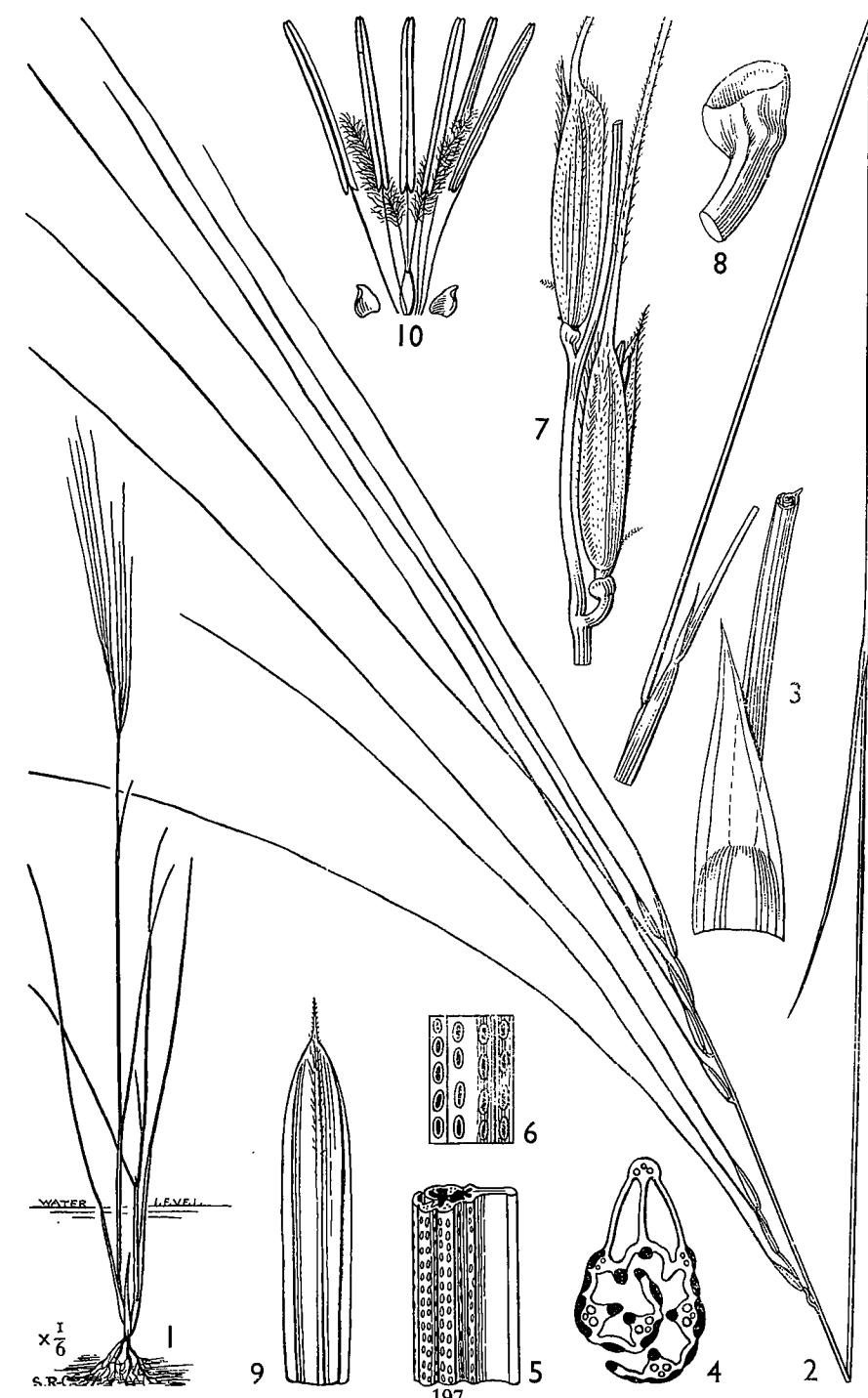
*Oryza angustifolia* C. E. Hubbard (Gramineae)

*Gramen annuum*, usque 70 cm. altum. *Culmi* solitarii vel non numquam laxe fasciculati, erecti, vel basi prostrati vel geniculati et e nodis inferioribus radicantes, graciles, siccitate compressi, 3-4-nodes, simplices vel e nodis inferioribus ramosi ramulis erectis, glabri, laeves, internodio supremo filiformi tenuissime striato e vagina supraem demum longe exerto. *Foliorum vaginae* compressae, carinatae, glabrae, laeves, tenues, fere membranaceae, tenuiter nerved, inter nervos transverse nervatae, ore auriculis erectis angustis ligula adnatis praeditae, inferiores laxae, pallidae, internodiis longiores, superiores virides, arcte appressae, internodiis demum breviores; *ligulae* membranaceae, lanceolatae, apice acuto attenuatae et demum fissae, 3-7 mm. longae; *laminae* filiformes, setaceae, apice acutae, 10-30 cm. longae, convolutae, basi carinatae usque 1 mm. latae, superne teretes usque 0.5 mm. diametro, strictae vel leviter flexuosa, virides, glabrae, nervis minutissime granulatae vel apicem versus minutissime scaberulae, inter nervos laterales et costam medium translucidae et transverse nervatae. *Inflorescentia* angusta, gracilis, secunda, erecta vel leviter curvata, 3-8 cm. longa (aristis exclusis), simplex et racemiformis, vel ramos 1-2 gerens; axis primarius gracillimus, laevis; rami erecti et adpressi vel leviter curvatae, 2-4 cm. longi, simplices, secundi, 1-6-spiculati; rhachis laevis; pedicelli apice incrassati et oblique truncati, circiter 1 mm. longi. *Spiculae* anguste oblongae, 5-8 mm. longa, 1-1.3 mm. latae, contiguae vel leviter imbricatae, nervis virides, ceterum albidae vel rubido-suffusae. *Glumae* ad annulum cupulariformem obscurissimum redactae. *Lemmatia* sterilia nulla. *Lemma* fertile anguste oblongum, ex apice longe aristatum, coriaceum, lateribus pilis minutissimis adpressis obscure asperulum vel fere laeve, marginibus prope apicem minute scaberulum, carina et marginibus apice pilis setaceis brevibus erectis hispido-ciliatum, 5-nerve; arista longissima, tenuissima, erecta, stricta, 11-18 cm. longa, scaberula, rubida, vel inferne albida et superne viridis. *Palea* lemmate paullo longior, lineari-oblonga, carina prope apicem hispido-ciliata, apice cuspidata, cuspide 1-2 mm. longa. *Antherae* purpureae vel albidae, 3-4 mm. longae. *Caryopsis* anguste oblonga, pallide brunnea, usque 3.5 mm. longa (juvenilis) (C. E. Hubbard in *Hooker's Icones Plantarum*, 35: t. 3492; 1950).

Grass annual, up to 70 cm. high. Culms solitary or sometimes loosely bunched, erect, at base prostrate or bent and rooting from the lower nodes,

Fig. 12 *Oryza angustifolia* C. E. Hubbard

1, planta integra; 2, pars supra caulis floriferi; 3, ligula; 4, sectio transversa laminae folii; 5, pars laminae folii; 6, pars paginae inferioris laminae folii; 7, spiculae; 8, apex pedicelli; 9, palea explanata; 10, flos (by Stella Ross-Craig, from *Hooker's Icones Plantarum*, 35; 1950)



slender, in a dried state compressed, 3-4-noded, simple or branched from the lower nodes with erect branchlets, glabrous, smooth, with the uppermost internode filiform very delicately striate from the uppermost sheath at length long-exserted. *Sheaths of the leaves* compressed, keeled, glabrous, smooth, thin, almost membranous, thinly nerved, between the nerves transversely veined, provided at the mouth with erect narrow auricles adnate to the ligula, the lower ones loose, pale, longer than the internodes, the upper ones green, closely appressed, at length shorter than the internodes; *ligules* membranous, lanceolate, at the acute apex attenuate and at length split, 3-7 mm. long; *blades* filiform, setaceous, at the apex acute, 10-30 cm. long, convolute, at base keeled up to 1 mm. broad, upwards terete up to 0.5 mm. in diameter, straight or lightly flexuous, green, glabrous, at the nerves very minutely granulate or towards the apex very minutely scaberulous, between the lateral nerves and the midrib translucent and transversely nerved. *Inflorescence* narrow, slender, secund, erect or lightly curved, 3-8 cm. (excluding the awns), simple and raceme-like, or bearing 1-2 branches; primary axis very slender, smooth; branches erect and appressed or lightly spreading, 2-4 cm. long, simple, secund, with 1-6 spikelets; rachis smooth; pedicels thickened at the apex and obliquely truncate, about 1 mm. long. *Spikelets* narrowly oblong, 5-8 mm. long, 1-1.3 mm. broad, touching or lightly overlapping, at the nerves green, for the rest whitish or reddish-tinged. *Glumes* reduced to a cup-shaped very obscure ring. *Sterile lemmas* none. *Fertile lemma* narrowly oblong, from the apex long-awned, coriaceous, at the sides with very minute appressed hairs obscurely asperulous or almost smooth, at the margins near the apex minutely scaberulous, at the keel and margins at the apex with setaceous short erect hairs hispid-ciliate, 5-nerved; awn extremely long, very thin, erect, straight, 11-18 cm. long, scaberulous, reddish or white below and green above. *Pale* a little longer than the lemma, linear-oblong, with the keel near the apex hispid-ciliate, at the apex cuspidate with the cusp 1-2 mm. long. *Anthers* purple or whitish, 3-4 mm. long. *Grain* narrowly oblong, pale brown, up to 3.5 mm. long (juvenile).

## CHAPTER XV

## Punctuation

Niceties of punctuation did not trouble the Romans. They used the full stop, the *punctum*, but no commas because they had none to use. The unhappy result of pedantically ignoring this invention of medieval scribes and of reverting to ancient practice may be seen in Prain's monumental revision of the Indian species of *Pedicularis* (*Ann. R. Bot. Garden, Calcutta* 3; 1890), where diagnoses in the ablative up to 180 words long dispense entirely with such aids to easy consultation as stops, commas and italics. Fortunately Prain did not repeat this experiment in archaism. Most botanists, however, use more commas than they need. As an American has characteristically observed, 'punctuation is like government, the less you have the better off you are, providing you have enough to maintain order'.

It is traditional to punctuate Latin descriptions which employ the nominative differently from diagnoses which employ the ablative. In a description the account of each organ forms a separate sentence and hence is in the nominative case, as pointed out by Lindley and Asa Gray, the ablative being employed only for subsidiary clauses; except within such clauses, each adjective is usually (though not necessarily) separated by a comma. The whole description is analogous to a paragraph made up of several sentences. Procedure varies, but it seems best to separate the account of one organ from that of another by a full stop and to use semi-colons to mark off the parts of an organ which are separately described. Thus: '*Stamina* 6, *fauci perigonii inserta*, *adscendentia*; *filamenta brevissima*; *antherae oblongae*. *Ovarium* *cum perigonii tubo adnatum*, *triloculare*, *ovulis numerosis*; *stylus filiformis*; *stigma capitatum*.'

A description in the ablative is an extended specific character or diagnosis and is essentially a single sentence with all of the ablative clauses hanging, as it were, upon the name of the species at the beginning or on an opening statement in the nominative. It should not be broken into unanchored phrases by capital letters and full stops, this being a procedure both illogical and distasteful, like writing in English: 'Herb perennial. With leaves pinnate. With leaves ovate. With flowers solitary or in pairs. With calyx pilose.' When using the ablative it is best to separate the main clauses (i.e. those relating to different

organs) by means of semi-colons and the subsidiary clauses (i.e. those relating to different attributes of the same organ) by means of commas. Putting the names of organs in italic, while unnecessary in a short diagnosis, helps the reader of a long one, thus: 'Frutex erectus 1-2 m. altus; *ramis* hornotinis teretibus pilis albidis vestitis; *foliis* sessilibus obovatis obtusis glabris coriaceis, nervo medio supra impresso, nervis lateralibus e medio sub angulo 60°-80° abeuntibus; *floribus* lateralibus et terminalibus solitariis magnis, pedicellis 1 cm. longis; *calyce* campanulato, lobis rotundatis tubo duplo brevioribus; *corolla* alba, odorem gratum exhalente, tubo 5 cm. longo, lobis orbicularibus 2 cm. longis; *staminibus* exsertis, filamentis pilosis, antheris luteis linearibus.'

Here as a warning to typographical wantons is the same diagnosis entirely free of controlling punctuation, etc.: 'Frutex erectus 1-2 m. altus ramis hornotinis teretibus pilis albidis vestitis foliis sessilibus obovatis obtusis glabris coriaceis nervo medio supra impresso nervis lateralibus e medio sub angulo 60°-80° abeuntibus floribus lateralibus et terminalibus solitariis magnis pedicellis 1 cm. longis calyce campanulato lobis rotundatis tubo duplo brevioribus corolla alba odorem gratum exhalante tubo 5 cm. longo lobis orbicularibus 2 cm. longis staminibus exsertis filamentis pilosis antheris luteis linearibus.' The other objectionable extreme is to retain the ablative case throughout but nevertheless to treat the clauses as separate sentences, thus: 'Frutex erectus, 1-2 m. altus. Rami hornotinis teretibus, pilis albidis vestitis. Foliis sessilibus, obovatis, obtusis, glabris, coriaceis, nervo medio supra impresso, nervis lateralibus e medio sub angulo 60°-80° abeuntibus. Floribus lateralibus et terminalibus, solitariis, magnis. Pedicellis 1 cm. longis. Calyce campanulato, lobis rotundatis, tubo duplo brevioribus. Corolla alba, odorem gratum exhalante, tubo 5 cm. longo, lobis orbicularibus, 2 cm. longis. Staminibus exsertis, filamentis pilosis, antheris luteis linearibus.' This is, of course, much easier to read than the preceding block of uninterrupted type, but betrays an ignorance of the history and function of the ablative case in botanical Latin.

Such a description is better in the nominative. Purged of some superfluous commas, the above would read as follows: 'Frutex erectus 1-2 m. altus. *Rami* hornotini teretes, pilis albidis vestiti. *Folia* sessilia obovata obtusa glabra coriacea, nervo medio supra impresso, nervis lateralibus e medio sub angulo 60°-80° abeuntibus. *Flores* laterales et terminales solitarii magni; pedicelli 1 cm. longi. *Calyx* campanulatus, lobis rotundatis tubo duplo brevioribus. *Corolla* alba, odorem gratum exhalens; tubus 5 cm. longus; lobi orbiculares 2 cm. longi. *Stamina* exserta; filamenta pilosa; antherae luteae lineares.' This clear and simple manner of punctuation, with commas used only

to separate major clauses and obviate confusion, is essentially that adopted by J. G. Baker in his revision of *Liliaceae* (*J. Linn. Soc. Bot.*, 13-18: 1872-80).

The colon is now rarely used in botanical Latin, although Linnaeus employed it occasionally, making it function as a point inferior to the comma. As stated by Hugh Rose in 1775 (*Elements of Botany* 341), 'Linnaeus uses the *comma* to distinguish the parts and the *colon* where there is a subdivision of a part, and the *punctum*, or full stop, at the end of the sentence'. Thus: 'LINUM calycibus acutis alternis, capsulis muticis, panicula filiformi, foliis alternis lanceolatis: radicalibus ovatis'. Although in this way contrary to modern practice, Linnaeus's use of 'ponctuation, cette grande ressource inconnue aux anciens, est toujours uste', as Alphonse de Candolle remarked. Within limits there are no hard and fast rules about punctuation; its functions are to make for clarity and ease in comparing one description with another and to prevent ambiguity; provided these ends are achieved, a little variation from customary usage does no harm.

## CHAPTER XVI

## Habitats

Plants of rocks, hills and mountains, p. 203—Plants of woods and thickets, p. 203  
—Plants of pastures, meadows, fields, etc., p. 204—Aquatic and coastal plants, p. 204—Parasitic, epiphytic and saprophytic plants, p. 204—Ecological epithets, p. 205.

The conditions under which plants grow have always interested botanists. Their technical descriptions usually conclude with an ecological note summarizing the information given on collectors' labels. The statement traditionally begins with *habitat* (it dwells), which in English has consequently become a noun indicating place of growth, less often with *crescit* (it grows), *occurrit* (it occurs), *amat* (it loves), *incolit* (it inhabits), *viger* (it thrives). As stated by Kerner and Oliver, 'The botanists of former times distinguished such habitats into a large number of different classes, from which we may select the following as the most important: fresh-water springs (*fontes*), salt springs (*salina*), brooks (*amnes*), torrents (*torrentes*), rivers (*fluvii*), pools (*stagna*), lakes (*lacus*), the sea (*mare*), shores of rivers and lakes (*ripae*), sea-coasts (*littora*), marshes (*uliginosa*), swamps which dry up in the summer (*paludes*), peat-bogs (*turfosa*), places that are periodically flooded (*inundata*), pastures (*campi*), steppes (*pascua*), deserts (*deserta*), sunny hills (*colles*), stony places (*lapidosa*), rocky places (*rupestria*), sands (*arena*), argillaceous soil (*argilla*), loam (*lutum*), debris (*ruderata*). Linnaeus, who was a pioneer ecologist, described plants as growing '*in apricis* (sunny open places), *aquosis* (watery places), *aridis* (dry places), *arvis* (arable fields), *asperis* (rough places), *campis* (plains), *collibus* (hills), *cultis* (cultivated places), *desertis* (deserts), *duris* (hard or rough places), *frigidis* (cold places), *glareosis* (gravelly places), *graminosis* (grassy places), *hortis* (gardens), *humentibus* (damp places), *inundatis* (flooded places), *litoribus maritimis* (sea shores), *montosis* (mountainous places), *muris* (walls), *nemoribus* (open woodland), *paludibus* (marshes), *pascuis* (pastures), *pratis* (meadows), *ruderatis* (rubbish dumps), *rupibus* (rocks), *sabulosis* (sandy places), *sterilibus* (sterile places), *sylvestribus* (woody or wild places), *sylvis* (woods), *tectis* (roofs), *udis* (damp places), *uliginosis* (marshy places) as well as *ad agros* (fields), *ad agrorum* *versuras* (edges of fields), *ad fossas* (ditches), *ad ripas fluviorum* (banks of rivers)' (cf. Stearn, 1959: 89).

The preposition *ad* (at) is used with the accusative, e.g. *ad truncos ramosque*, but *in* (in, on), when denoting rest, with the ablative, e.g. *in truncis ramisque*. To indicate the host-plants of parasites and epiphytes the genitive is also much used, e.g. *ad truncos vetustos arborum Pini, Betulae, Quercus, etc. Sueciae meridionalis* (on the old trunks of trees of *Pinus*, *Betula*, *Quercus*, etc., of southern Sweden). The verbs *amat* (it loves) and *incolit* (it inhabits) are followed by the accusative, e.g. *amat loca humida* (it loves damp places), *incolit rupes* (it inhabits rocks).

## PLANTS OF ROCKS, HILLS AND MOUNTAINS

*Hab. in montibus altis Jamaicae.* It grows in high mountains of Jamaica.  
*Hab. in locis saxosis montium et etiam collium Delphinatus borealis.* It grows in stony places of the mountains and also the hills of northern Dauphiné.  
*Hab. in collibus petrosis Galloprovinciae.* It grows in rocky hills of Provence.  
*In locis siccis et apertis praesertim ad rupes et muros.* In dry and open places especially on rocks and walls.  
*Communis in muris tectisque.* Common on walls and roofs.  
*Ad rupes calcareas Helvetiae.* On calcareous rocks of Switzerland.  
*Ad saxa et rupes graniticas et micaceas Sveciae totius.* On granitic and micaceous stones and rocks of all Sweden.  
*Ad saxa syenitica, gneissiaca et granitica muscis vestita supra zonam Fagi alpium.* On syenite, gneiss and granitic stones clothed with mosses above the beech zone of the alps.  
*In fissuris rupium siccarum.* In fissures of dry rocks.  
*In cryptis umbrosis inter fragmenta saxorum.* In shady pits between broken-off pieces of stone.  
*In scopolis humidis ad cataractam.* On damp rocks at the waterfall.

## PLANTS OF WOODS AND THICKETS

*Habitat in sylvis montium usque ad 500 m. supra mare.* It grows in woods of mountains up to 500 m. above sea-level.  
*Crescit inter frutices in sylvis frondosis, praesertim prope rivulos in locis lapidosis simulque humidis, radicibus demissis in terram argillaceam, qua fissurae rupium impletiae sunt.* It grows among shrubs in broad-leaved woods, especially near streams in places rocky and at the same time moist, with the roots planted in clay soil, with which the fissures of the rocks are filled.  
*In sylvis humidis praecipue quercinis in planitiebus collibus montibusque.* In damp woods especially of oak on plains, hills and mountains.  
*In dumosis collium.* In thickets of hills.  
*In pinetis, betulis, fagetis et etiam castanetis.* In woods of pine, birch, beech and also sweet chestnut.

## PLANTS OF PASTURES, MEADOWS, FIELDS, ETC.

*In pascuis siccis.* In dry pastures.

*In pratis uidis.* In moist meadows.

*In arvis arenosis.* In sandy fields.

*In hortis et ad margines agrorum.* In gardens and at the margins of fields.

## AQUATIC AND COASTAL PLANTS

*In terram hyeme inundatam.* On land flooded during the winter.

*In fossis et stagnis.* In ditches and ponds.

*In palude alpina et in paludibus regionis inferioris.* In the alpine marsh and in marshes of the lower region.

*Ad saxa in aquis fluentibus quietis.* On rocks in running or still water.

*In aquis dulcibus ad lapides et plantas aquáticas et ad parietes piscinarum et puteorum.* In fresh water on stones and aquatic plants and on the walls of cisterns and wells.

*Ad saxa, muros, terram, palos, fucos paulo infra limitem superiorem fluxus in Oceano Atlantico ad oras Galliae et Angliae.* On rocks, walls, earth, pales, Fuci a little below the upper limit of the tide in the Atlantic Ocean on the coasts of France and England.

*Ad oras Atlanticas Europae et Americae borealis.* On the Atlantic shores of Europe and North America.

## PARASITIC, EPIPHYTIC AND SAPROPHYTIC PLANTS

*In foliis caulibusque Labiatarum imprimis Menthae, Thymi, Glechomae, Lamii, Hedeomatis.* On leaves and stems of Labiate, particularly of *Mentha*, *Thymus*, *Glechoma*, *Lamium*, *Hedeoma*.

*In plantis Umbelliferarum, e.g. Trinia, Osterici, Anthrisci, Myrrhis, Sileris.* On plants of Umbelliferae, e.g. of *Trinia*, *Ostericus*, *Anthriscus*, *Myrrhis*, *Siler*.

*In foliis adhuc vivis vel languidis Senecionis jacobaeae.* On leaves as yet living or wilted of *Senecio jacobaea*.

*Ad ramos Sarothamni, Calycotomes, Anthyllidis, Genistae.* On branches of *Sarothamnus*, *Calycotome*, *Anthyllis*, *Genista*.

*In cortice et ligno Betulae, Alni, Quercus.* In the bark and wood of *Betula*, *Alnus*, *Quercus*.

*In caulibus emortuis Urticae.* On dead stems of *Urtica*.

*Ad basim caulinum putrescentium Echii vulgaris.* At the base of decaying stems of *Echium vulgare*.

*In vaginis Secalis et graminum variorum.* On the sheaths of *Secale* and various grasses.

*Ad culmos exsiccatos Phragmitis, Arundinis.* On dried culms of *Phragmites*, *Arundo*.

*Ad caules et ramos varios, e.g. Oleae, Arbuti, Quercus, Odontitis.* On various stems and branches, e.g. of *Olea*, *Arbutus*, *Quercus*, *Odontites*.

*In pagina superiori vel inferiori vel in utraque pagina foliorum.* On the upper or the lower or on each surface of the leaves.

*In arborum truncis ramulisque.* On the trunks and branchlets of trees.

*In sylva Amazonica ubique ad arborum folia viva, interdum ad herbas nobiliores, necnon in filicibus.* In the Amazonian forest everywhere on the living leaves of trees, sometimes on the robuster herbs, and also on ferns.

*Supra folia coacervata putrida Abietis.* Above heaped decayed leaves of *Abies*.

*In ligno carioso.* In rotten wood.

*Ad trunca prostrata putrescentes saepe cum aliis hepaticis muscisque.* On prostrate rotting trunks often with other liverworts and mosses.

*Ad firum vaccinum.* On cow dung.

*In fimo ovino.* On sheep droppings.

*Habitat ad epidermidem (in epidermide) capitis humani.* It inhabits the skin of the human head.

*Ad pedem hominis inter digitos.* On the foot of a man between the toes.

*In tumore (granulomato) cerebri feminae.* In the cerebral tumour of a woman.

*In pure abscessus hominis diabetici.* In the pus of an abscess of a diabetic man.

*In tumoribus subcutaneis interioribusque in toto corpore disseminatis hominis.* In subcutaneous and inner swellings (nodules) scattered over the whole body of a man.

*In canibus, equis, bovibus, etc., et in hominibus praecipue infantibus, in quibus eruptionem cutis causat.* In dogs, horses, cattle, etc., and in men, especially infants, in whom it causes an eruption of the skin.

*In ulceribus canis et muris.* In ulcers of a dog and a mouse.

## ECOLOGICAL EPITHETS AND TERMS

Epithets relating to habitats (*stationes*) are formed from nouns by using the suffix *-icola* (dweller), e.g. *paludicola* (a marsh-dweller), less often *-gena* (-born), e.g. *paludigena* (marsh-born), or adjectival endings indicating possession or connexion, as *-alis*, *-anus*, *-arius*, *-aticus*, *-inus*, or place of occurrence, as *-ensis*, *-estrus*, etc.

In phrases such as *in aridis*, the term *solum natale* (natal soil), abl. pl. *solis natalibus*, used by Linnaeus in the sense of 'habitat', is implied but not expressed; the adjective is treated as a second declension neuter noun, e.g. *aridum* (dry place).

A glossary of Latin ecological words used by Ray, Dillenius and their contemporaries will be found on pp. 75-81 of my introduction to the Ray Society's facsimile (1972) of Ray's *Synopsis methodica Stirpium Britannicarum*, 3rd ed. (1724).

## CHAPTER XVII

## Geographical Names

Kinds of geographical names, p. 206—Geographical terms, p. 207—Use of locative case and prepositions, p. 208—Classical names, p. 209—Later names, p. 209—Latinization of place-names, p. 211—Geographical epithets, p. 211—Some geographical names used in botanical Latin, p. 214—Index, p. 231—References, p. 235.

## KINDS OF GEOGRAPHICAL NAMES

Geographical names used in botanical Latin may be divided historically into three groups corresponding to their period of origin:

(1) Those used by the Romans themselves, such as *Roma*, *Sicilia*, which have survived through continuous usage or are recorded by the classical geographers.

(2) Those coined during the Middle Ages and the sixteenth century for legal or academic purposes, such as *Oxonia* (Oxford), *Cantabrigia* (now Cambridge), *Lipsia* (by way of Leipzig from Liptziche, now Leipzig).

(3) Those of modern origin, which may be names already of Latin form, as *Argentina*, *Australia*, *Czechoslovakia*, *Indonesia*, *Liberia*, *Nigeria*, or native names given a Latin ending, as *Chittagonga*, or Latin equivalent, as *Flumen Januarii* (Rio de Janeiro). Names of Latin form, whatever their origin, are treated grammatically as Latin words. Thus *Africa*, *Alsatia*, *Jena*, *Japonia* and others ending in *-a* are declined as feminine nouns of the First Declension, their genitive singular ending in *-ae*; *Amanus*, *Emodus*, etc., as masculine nouns, and *Argentoratum*, *Divionum*, etc., as neuter nouns, both of the Second Declension, with the genitive singular ending in *-i*; *Borysthenes* (m.), *Petropolis* (f.), *Tamesis* (m.), etc., as nouns of the Third Declension, with the genitive singular ending in *-is*. Others are best accepted as indeclinable, i.e. they are cited unchanged, as in the statements: *in itinere per Stiriam superiorem*, *in valle inter Kapfenberg et Aflenz ab incolis 'Thörlgraben' nominata* (on the journey through upper Steiermark, in the valley between Kapfenberg and Aflenz named 'Thörlgraben' by the inhabitants); *in Scania ad Trollehall, prope Gothoburgum, prope Holmiam*, *in montibus Sumpfalen* (in Skåne at Trollehall, near Gothenburg, near Stockholm, in the Sumpfalen mountains); *in montibus Sierra de*

*Cazorla, loco dicto 'Cruz del Muchacho'* (in the mountains Sierra de Cazorla, at the place called 'Cruz del Muchacho').

## GEOGRAPHICAL TERMS

Indeclinable place-names are often qualified by an explanatory geographical term in the appropriate case, e.g.: *in provincia Cajatambo in montibus Cordillera negra ad viam ad oppidum Ocros ad jugum Chonta dictum* (in Cajatambo province in the Cordillera Negra mountains by the way to the town Ocros at the ridge called Chonta); *in sylvis montium Azuay et Guayrapata* (in woods of the mountains Azuay and Guayrapata); *in montibus Chimborazo et Azuay* (on the mountains Chimborazo and Azuay); *in monte Pico de Arvas* (on the mountain Pico de Arvas).

The following are the commonest of such terms:

<i>ager</i> (m.):	territory, district, domain	Italian <i>monte</i> , Chinese <i>shan</i> , Turki <i>tau</i> , Japanese <i>yama</i> , etc.
<i>comitatus</i> (m.):	county	<i>oppidum</i> (n.): town
<i>convallis</i> (f.):	valley enclosed on all sides	<i>pagus</i> (m.): district, canton; applied to an area with definite boundaries
<i>desertum</i> (n.):	desert	<i>paroecia</i> (f.): parish
<i>districtus</i> (m.):	district, controlled area	<i>peninsula</i> (f.): peninsula
<i>ditio</i> (f.):	dominion, sovereignty	<i>planities</i> (f.): plain
<i>finis</i> (m.):	boundary, border	<i>promontorium</i> (n.): promontory, headland, cape
<i>fiumen</i> (n.):	river	<i>planities</i> (f.): plain
<i>fiuvius</i> (m.):	river	<i>provincia</i> (f.): province
<i>fretum</i> (n.):	strait	<i>regio</i> (f.): district, territory, region; applied to area of indefinite extent
<i>insula</i> (f.):	island, isle	<i>regnum</i> (n.): kingdom, realm
<i>isthmus</i> (m.):	isthmus	<i>sinus</i> (m.): bay, gulf
<i>jugum</i> (n.):	mountain ridge, chain of mountains	<i>sylva</i> (f.): forest
<i>lacus</i> (m.):	lake	<i>terra</i> (f.): land, territory, region
<i>littus, litus</i> (n.):	coast, sea-shore	<i>territorium</i> (n.): land around a town, territory, district
<i>locus</i> (m.), <i>locum</i> (n.):	place	<i>vallis</i> (f.): valley
<i>mare</i> (n.):	sea	
<i>mons</i> (m.):	mountain, translating in place-names the German <i>Berg</i> , Turkish <i>dağ</i> ( <i>dagh</i> ),	

Regional names are often formed from these terms by the addition of an adjective, e.g. *ager Lugdunensis* (Lyonnais); *districtus Murmanensis* (Murmansk district); *fretum Magellanicum* (Straits of Magellan); *peninsula Athoa* (Athos peninsula); *regio Danubialis*

(Danube region); *sinus Ligusticus* (Golfo di Genova). This adjective agrees in gender, number and case with the noun, e.g. *in locis siccis agri Lugdunensis* (in dry places of the Lyon district), *in agro Lugdunensi* (in the Lyon district). It usually follows the noun, but can be placed before it. Further precision may be given by the use of the adjectives:

*australis, meridionalis*: southern  
*austro-occidentalis*: south-western  
*austro-orientalis*: south-eastern  
*borealis, septentrionalis*: northern  
*boreo-occidentalis*: north-western

*boreo-orientalis*: north-eastern  
*centralis, mediis*: central  
*occidentalis*: western  
*orientalis*: eastern

An example is:

*Habitat in parte regionis mediterraneae austro-occidentali, praecipue in Hispania centrali et Lusitania meridionali, ubi occidentem versus abundat.* It occurs in the south-western part of the Mediterranean region, especially in central Spain and southern Portugal, where towards the west it abounds.

#### USE OF LOCATIVE CASE AND PREPOSITIONS

The place at which something happens, e.g. a plant grows or a book is published, may be expressed by means of the locative case (see p. 67) without a preposition. This is commonly used on the title-pages of books. For First Declension nouns the locative singular is the same as the genitive, e.g. *Kilae* (at Kiel), *Lipsiae* (at Leipzig), *Romae* (at Rome), as also for Second Declension nouns, e.g. *Londini* (at London), *Rhodi* (at Rhodes), *Taurini* (at Turin). Names of plural form, though of singular meaning, e.g. *Athenae* (Athens), *Aquae-Carolinae* (Karlsbad), *Delphi* (Delphi), *Parisii* (Paris), have the locative the same as the dative plural, e.g. *Athenis* (at Athens), *Aquis-Carolinis* (at Karlsbad), *Delphis* (at Delphi), *Parisiis* (at Paris). For the Third Declension nouns the locative is sometimes the same as the dative, e.g. *Carthagini* (at Carthage), *Neapoli* (at Naples), *Petropoli* (at St. Petersburg), but usually it is the same as the ablative, e.g. *Hispale* (at Seville), *Olisipone* (at Lisbon), *Oeniponte* (at Innsbruck).

The prepositions *a*, *ab* (from), *e* or *ex* (from) and *in* are followed by the place-name in the ablative, *ad* (at), *circa* (about), *cis* (on this side of), *per* (through), *prope* (near), *supra* (above) and *trans* (across) by it in the accusative, e.g. *in America a Bolivia per Panamam usque ad Californiam* (in America from Bolivia through Panama up to California).

#### CLASSICAL NAMES

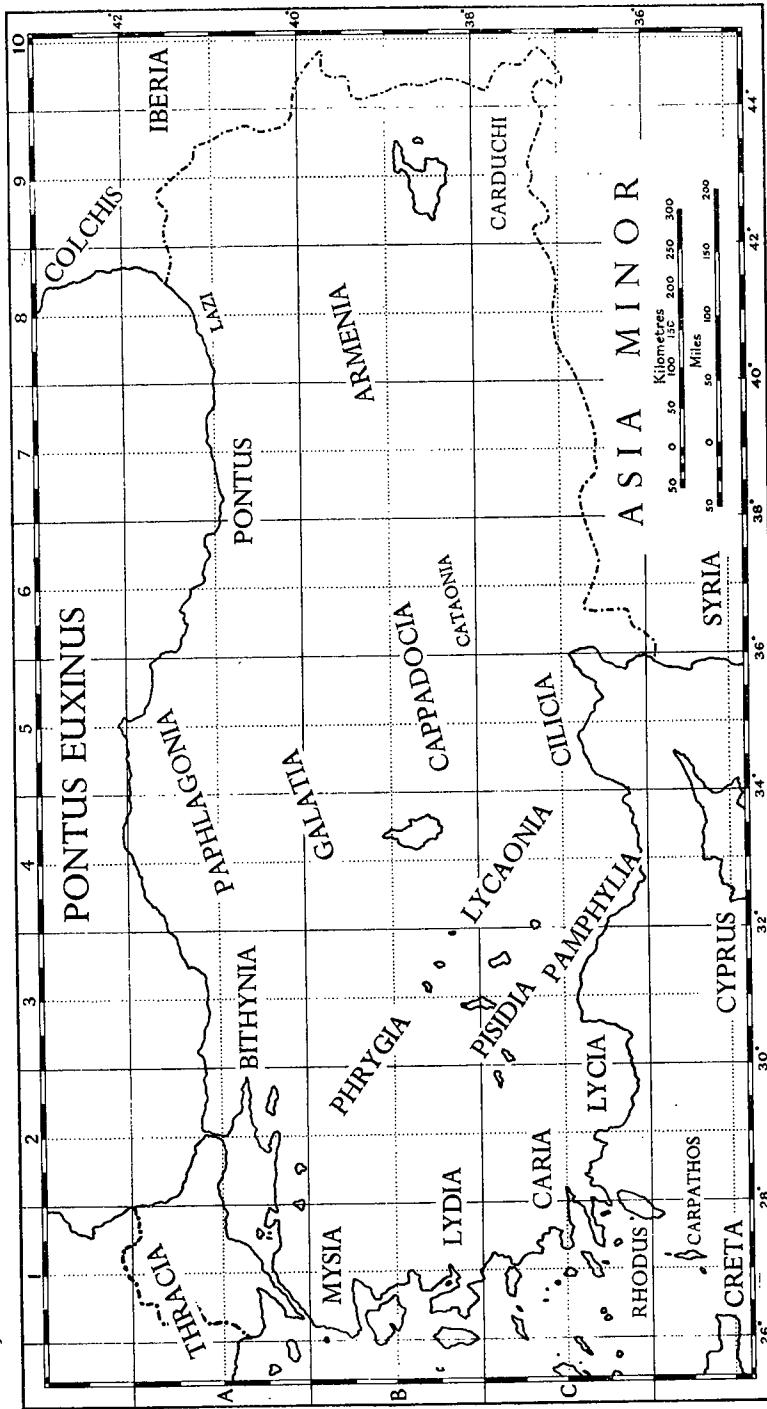
Names for places in Asia came into classical literature in the first place largely through the conquests of Alexander the Great (356–323 B.C.). Under his leadership Greek armies marched across Mesopotamia and Persia and reached the Oxus (Amu Darya), Iaxartes (Syr Darya) and Indus rivers. From Asiatic merchants the Greeks learned about the remote eastern islands of Taprobane (Ceylon) and Iabadius (Java). Later the conquests of Rome created an empire in the west which stretched from the Atlas mountains of Mauritania (Morocco) to the Vallum Romanum (Roman Wall) of northern Britain: 'The boundaries of the Empire', as Sir Mortimer Wheeler states in his *Rome beyond the Imperial Frontiers* (1955), 'particularly in the East, were sufficiently fluid to ensure a constant awareness of more distant horizons, of greater riches, more marvels, fresh menaces.' Traders from the Roman Empire penetrated into Germany and Sarmatia (eastern Europe) and foreign-born slaves, mercenaries and merchants probably brought information about more distant sparsely populated and inhospitable regions such as Scandinavia and Scythia. There were, moreover, Roman trading ports (*emporia*) along both the west and the east coasts of India. Thus for the Mediterranean region and the adjoining countries which were or had been under Greek or Roman rule, indeed for the region south of a line stretching obliquely from Britain and France to the borders of India and including north Africa, the later geographers of antiquity, Pliny the Elder, Pomponius Mela and Ptolemy, had much information available. Hence for many places within this region there exist genuine classical names. Botanists writing in Latin have made extensive use of them. Thus Edmond Boissier, lacking convenient modern names for districts of the nineteenth-century Ottoman Empire, used the old classical names when recording in his *Flora Orientalis* (1867–84) the distribution of plants within the Near and Middle East (see Fig. 13).<sup>1</sup>

For such names, reference should be made to standard works on classical geography, as those of E. H. Bunbury (1879), H. Kiepert (1881), William Smith (1873), J. O. Thomson (1948), H. F. Tozer (1939), and atlases, such as those of A. A. M. van der Heyden & H. H. Scullard (1959), J. B. Grundy (1917), J. O. Thomson (in the Everyman Library, 1961).

#### LATER NAMES

During the Middle Ages, when Latin still survived as the official language for legal, ecclesiastical and other matters, many European

<sup>1</sup> The late Professor Ch. Baehni informed me that, judging from Boissier's private library, he used chiefly A. Brué, *Carte générale de l'Asie Mineure* (1839).



towns which had not existed in Roman times found it necessary to provide themselves with coined names of Latin form for use in charters and other documents. Usually such names were simply modifications of the original name, e.g. *Cantabrigia* derived by way of *Cantebrugge* from *Grantebrycge* (now Cambridge). Sometimes they were translations or equivalents, e.g. *Regiomontum* for Königsberg (now Kaliningrad). Homonyms were usually distinguished by a qualifying word or phrase, e.g. *Francofurtum ad Moenum* (Frankfurt am Main), *Francofurtum ad Oderum* (Frankfurt an der Oder). Such names often occur on the title-pages of books written in Latin.

The store of such Latinized place-names has greatly increased during the last three hundred years. Thus the Cape of Good Hope (not discovered until 1488, then named by the Portuguese King John II *Cabo de Boa Esperança* for the good hope it gave of a sea-route to India) appears in many botanical works as *Caput Bonae Spei* or *Promontorium Bonae Spei*, often abbreviated to *C.B.Spei*, *P.B.Spei* or *C.B.S.*; and the epithet *capensis* forms part of the specific name of many a South African plant. Some of these names were based on local names now obsolete, as *Sebastianopolis* for São Sebastião (now Rio de Janeiro). The works of the Abbé Chevin, P. Deschamps, E. de Toni and J. G. Th. Graesse together include most of them but by no means all. Those which escaped their notice are sometimes very puzzling. Thus *Bisnagaria* is derived from the Portuguese *Bisnaga* which referred to the ancient kingdom of Vijayanagar in southern India east of Malabar and south of the river Kistna. Vellozo's *Pharmacopolis* refers to Parati (formerly Nossa Senhora dos Remedios) in Brazil near Rio de Janeiro. Following Vatican usage (cf. Bacci, 1955), *Neanthropolis* is Addis Ababa, *Antherocrenopolis* Bloemfontein.

#### LATINIZATION OF PLACE-NAMES

Comparison of classical place-names with their medieval and modern derivatives and of medieval and sixteenth-century place-names with their Latinized versions shows no unvarying pattern of change from one to the other. Thus the ending '-land' may be rendered as *-landia*, e.g. *Gotlandia* (Gotland), *Groenlandia* (Greenland), *Islandia* (Iceland), or translated by *terra*, e.g. *Terra Nova* (Newfoundland), or omitted, e.g. *Gelria* (Gelderland), *Gothia* (Götland), *Jemtia* (Jämtland). Nevertheless certain equivalents, notably of endings, have been widely used. For example, the French 'château' is usually translated by *castrum*.

Fig. 13 Classical Regions of Asia Minor  
(Based on A. Brué, *Carte générale de l'Asie Mineure*, 1839, used by  
Edmond Boissier)

though sometimes by *castellum*, e.g. *Castrum* (or *Castellum*) *Brientii* (Châteaubriand), *Castrum Novum* (Château-Neuf); the German ‘-burg’ is usually rendered by *-burgum*, e.g. *Friburgum* (Freiburg), *Marburgum* (Marburg), the Swedish ‘-köping’ by *-copia*, e.g. *Junecopia* (Jönköping), *Lincopia* (Linköping). The French diphthongs *ai*, *ei*, *oi*, *ui* become *a*, *e*, *o*, *u*; similarly German *ei*, *ö*, *ü* become *i*, *o*, *u*. Initial *W* often becomes *V*, occasionally *Gu*.

The following list, based on one compiled by Saalfeld (1885), gives the usual changes of ending made when latinizing medieval and modern place-names:

-ac, -ach, -ack	-acum, -achium	-eil, eille	-elia
-ad	-adum	-ein	-inum
-agne	-ania	-em	-ēnum
-ailles	-alia	-en	-a, -ēna, -um, -ium, in names of regions
-ain, -aine	-ania, -anium		also in -ia
-al	-alium, -alia	-ence, -enz	-entia
-am	-amum	-ent	-entium
-an (ain)	-ānum, -anium in names of places	-er	-era
-an (ain)	-ania in names of regions	-euil	-olium
-ant, -anz	-antia	-ey	see <i>ei</i>
-ar	-aria	-feld	-felda, -feldia
-ars	-acum	-fels	-felsa
-at	-atum	-ford	-fort: -fordia
-atsch, -atz	-atium	-furt	-furtum
-au	-avia, -oa, -ovia, -augia in names of places	-gard	
-au	-ovia in names of regions	-gart	
-aux	-atium	-garten	-gardia
-berg	-berga, mons; -bergia (region)	-gorod	
-borg	-burgum	-grod	
-born	-borna	-gen	-ga in names of places
-burg	-burgum, -polis only when first part of name is Greek or Graecized	-gen	-gia in names of regions
-c	-iācum	-grad	-polis
-cester, -chester	-cestria	-hafen	-havia, portus
-court	-curia	-ham	-hamia, -hamium
-dorf	-dorpium	-hausen	-husa, -husium
-e	-a	-haven	-havia, portus
-e, -é	-as, -aeum	-heim	-hemium
-eau	-alum	-hof, -hofen	-hofa, -hovia, -hovium
-ec, -eck	-ecca, -ēca	-holm	-holmia
-eglia	-elia	-holz	-holtia
-ei, -ey	-eia in names of places	-horst	-horstium
-ei, -ey	-ia in names of regions	-hus, -husen	-husa, -husium
		-hut	-hutum
		-ich, -ick	-icum
		-ig, -ik	

-ie	-ia	-ost	-ostum
-igno	-inum	-oux	-osum
-im	-īnum, -īma	-ow	-ovia, -ovium
-in	-īnum, -īnum	-pol	-poli: -pōlis
-ing	ingen	-pré	-pratum
-itsch	-īcium, -ītium, -īcia	-que	-ea
-kirchen	-querca, -kerka	-r	-iacum
-köping	-copia	-sand	-sanda
-land	-landia, terra	-stadt	-stadium
-leben	-lēba, -lebia	-städte	
-minster	-monasterium	-stein	-steinium, -stenium
-mold	-moldia	-stock	-stochium
-mond, mont	-montium, mons	-t	-iacum
-mouth	-mutha, -muthum, -muthium	-thal	-thalia, -dalia
-münde	-munda	-us	-usium
-n	-iācum	-ville	-villa
-o, in Romance names	-um	-wegen	-vegia
-oglio	-oleum	-werth	-verda
-ogne	-onia	-wich, wijk	-vicum
-oise	-osia	-y	-ium, also -iacum
-on	-ona	-zell	-cella
-oping	-opia	-zza	-ssa
-öping			

#### GEOGRAPHICAL EPITHETS

Names of countries and localities used for specific or varietal epithets may be substantives in the genitive, e.g. *saharae* (of the Sahara), *emodi* (of the Emodus, i.e. Himalaya), *sanctae-helenae* (of St. Helena), *maris-mortui* (of the Dead Sea), *novi-belgii* (of the New Netherlands, later New York), *novae-zelandiae* (of New Zealand), *novae-angliae* (of New England), *palinuri* (of Capo Palinuro, Italy), *terrae-novae* (of Newfoundland), etc. The *International Code of botanical Nomenclature*, Rec. 82 E, recommends, however, that epithets taken from geographical names should be adjectives and end in *-ensis* (-e), *-anus* (-a, -um) or *-icus* (-a, -um), a large number of geographical adjectives having been formed in this way in classical Latin. Of geographical epithets in *-ensis*, classical examples are provided by *carthaginensis* (pertaining to Carthage), *castulonensis* (pertaining to Castulo, now Cazorla), *oscensis* (pertaining to Osca, now Huesca), *londinensis* (pertaining to London), etc. Among epithets in *-anus* are *africanus*, *gaditanus* (pertaining to Gades, now Cadiz), *neapolitanus* (pertaining to Neapolis, now Naples), *romanus* (pertaining to Rome), *pisanus* (pertaining to Pisa), *bactrianus* (pertaining to Bactria, Central Asia). The terminations *-acus*, *-aeus*, *-enus*, *-inus* and *-us* were also used to form geographical

adjectives, e.g. *aetnaeus* (pertaining to Mt. Etna), *alexandrinus* (pertaining to Alexandria), *cyrenaeus* (pertaining to Cyrene, North Africa), *damascenus* (pertaining to Damascus), *etruscus* (pertaining to Etruria, now Toscana), *siculus* (pertaining to Sicily), etc.

For botanical purposes *babylonicus* is preferable to *babylonius*, *aegyptiacus* to *aegyptius*, *britannicus* to *britannus*, *hispanicus* to *hispanus*; all were used in classical times.

Some plants have been named after the people whose territory they inhabit. The name of the people is then used in the genitive plural, e.g. *carduchorum* (of the Carduchi, the wild tribesmen of Kurdistan who so severely harried Xenophon and the Ten Thousand).

The termination *-cola* (indicating a dweller or inhabitant) is sometimes added to a place-name to form a specific epithet, e.g. *morrisonicola* (a dweller on Mt. Morrison). Usually, however, *-cola* is used to indicate the habitat rather than the place, e.g. *argillicola* (a dweller on clay), *arenicola* (a dweller on sand), *nubicola* (a dweller among the clouds, i.e. a high-alpine), *linicola* (a dweller among flax, i.e. a weed in flax-fields or a parasite or saprophyte on flax), *rupicola* (a dweller on rocks), *serpentinicola* (a dweller on serpentine rock), *phragmiticola* (a dweller on Phragmites).

Modern adjectives formed by adding *-icus*, *-anus* or *-ensis* to a modern place-name, e.g. *californicus*, *pensylvanicus*, *sibiricus*, *tibeticus*, *japonicus*, *carolinianus*, *americanus*, *mexicanus*, *jamaicensis*, *canadensis*, *nepalensis*, *brasiliensis*, *quebecensis*, *yunnanensis*, *australiensis*, need no explanation. There exist, however, many classical and medieval Latin place-names and adjectives of which the meaning is by no means immediately obvious, e.g. *granatensis*, *lugdunensis*, *lusitanicus*, *moesiacus*, *monspeliensis*, *patavinus*, *rothomagensis*, *salisburgensis*, *suecicus*, *telonensis* (pertaining to Telonis Portus, i.e. Toulon), *vindobonensis* (see below).

#### SOME GEOGRAPHICAL NAMES USED IN BOTANICAL LATIN

The following list gives modern equivalents for most of the Latin and Latinized place-names used in Linnaeus's *Species Plantarum* (1753), for records of distribution, and on the title-pages of books, to indicate place of publication, together with a number of names used by Boissier and others which may be difficult to interpret. To these have been added specific epithets associated with them. A fairly complete list of Latin and Latinized place-names would probably exceed 15,000 entries. The following list makes no claim to such completeness. For further information, use should be made of the works of Chevin, Deschamps, De Toni, Graesse and Martin.

Names of regions and countries as used by earlier authors, particularly by Linnaeus and his contemporaries, do not necessarily apply to exactly the same regions and countries as possess them today. Sometimes they were vaguely applied; often boundaries have changed. Many have become obsolete. They have to be interpreted by reference to the extent of botanical exploration at the time (cf. Stearn, 1958). Thus, as stated elsewhere, 'Canada in the Linnaean sense does not correspond to the modern Dominion of Canada but to a region of north-eastern America, partly in Canada, mostly in the United States, where Kalm did much collecting, i.e. roughly from Philadelphia and New York northward, by way of Albany, to Montreal and Quebec and from Albany westward along the Mohawk River to Lake Ontario and Niagara Falls' (Stearn, 1957: 144).

#### GEOGRAPHICAL NAMES

Aalandia : Åland Islands (Ahvenanmaa), Finland  
 Abbatis Cella : Appenzell, N.E. Switzerland (adj. *abbatiscellanus*)  
 Abellinum : Avellino, S. Italy  
 Aboa : Åbo (Turku), Finland  
 Acadia, Accadia : Nova Scotia, Canada (adj. *acadiensis*)  
 Achaia : Akhaia, Peloponnisos, S. Greece (adj. *achaius*)  
 Adscensionis Insula: *see* Ascensionis Insula  
 Aegyptus, Egyptus : Egypt, i.e. valley of the Nile between 24° 3' and 31° 37' N. (adj. *aegyptiacus*)  
 Aequatoria : Ecuador (adj. *aequatorialis*)  
 Aestuarium Reginae Charlottae : Queen Charlotte Sound, New Zealand  
 Aethiopia : Africa, usually South Africa, in classical use Africa south of Libya and Egypt, hence Abyssinia (adj. *aethiopicus*)  
 Aetna : Mt. Etna, Sicily, Italy (adj. *aetensis*)  
 Aetolia : Aitolia, mid Greece (adj. *aetolicus*)  
 Afghanistan, Afghania : Afghanistan (adj. *afghanicus*); *see* Bactria  
 Africa : Africa (adj. *afer*, *africanus*); *see* Aethiopia  
 Agennum, Aginum, Nitriobrigum : Agen, S. France  
 Aleppo : Alep (Haleb), N. Syria (adj. *aleppicus*, *chalepensis*, *halepensis*)  
 Alexandria : Alexandria, Egypt (adj. *alexandrinus*)  
 Algarbia : Algarve, Portugal (adj. *algarvicus*)  
 Allobrogicae Alpes : Savoy (Savoie), France (adj. *allobrogicus*)  
 Alpes : European Alps (adj. *alpinus*, *alpestris*); often used merely to indicate habitat rather than place)  
 Alsatia : Alsace (Elsass), France (adj. *alsaticus*)  
 Altorfia, Altdorffium : Altdorf, W. Germany (adj. *altorfinus*, *altdorfiensis*)  
 Alvarnia : Auvergne, France  
 Amanus : Amanus range, near Iskenderun, Turkey, Asia Minor (adj. *amanus*)  
 Amboina, Ambona : Amboina, Moluccas, Indonesia (adj. *amboinensis*, *amboinicus*)  
 Amicorum Insulae : Tonga Isles (Friendly Isles), Pacific Ocean

Amstelodamum : Amsterdam, Netherlands (adj. *amstelodamensis*)  
 Anatolia, Natolia : Turkey, Asia Minor (adj. *anatolicus*)  
 Ancyra : Ankara, Turkey, Asia Minor (adj. *ancyrensis*)  
 Andegavum : Angers, France (adj. *andegavensis*)  
 Angelopolis : Puebla (formerly Puebla de los Angeles), Mexico  
 Angermannia : Ångermanland, mid Sweden  
 Anglia : England (adj. *anglicus*)  
 Anneberga : Annaberg, E. Germany  
 Antillae, India occidentalis : West Indies (adj. *antillanus*)  
 Antverpia : Antwerp (Anvers), Belgium  
 Apenninus : the Apennines, Italy (adj. *apenninus*)  
 Aponus, Balneum Aponense : Abano, N. Italy  
 Aprutium : Abruzzi, Italy  
 Aquae Carolinae : *see* Thermae Carolinae  
 Aquitania : Aquitaine, S.W. France  
 Arabia : Arabia (adj. *arabicus*)  
 Arabicus Sinus : *see* Mare Rubrum  
 Aragonia : Aragon, N. Spain  
 Arcadia : Arkadhia, Peloponnisos, S. Greece (adj. *arcadiensis*)  
 Archipelagus : Aegean Islands, E. Mediterranean Sea  
 Argentoratum : Strasbourg (Strassburg), W. France  
 Argovia : Aargau (Argovie), Switzerland (adj. *argoviensis*)  
 Armorica, Aremonica : Brittany (Bretagne), N.W. France  
 Arvonia : Caernarvonshire, N. Wales, Britain (adj. *arvonius*, *arvoniensis*)  
 Arvonicae Alpes : Snowdon range, N. Wales, Britain  
 Ascensionis Insula, Adscensionis Insula : Ascension Island, South Atlantic  
 Atlas : Atlas Mountains, N.W. Africa (adj. *atlanticus*; gen. *atlantis*)  
 Atrebatum : Arras, N.E. France (adj. *atrebatensis*)  
 Atropatene : Azerbaijan, N.W. Iran (adj. *atropatanus*)  
 Attica : Attiki, S. Greece (adj. *atticus*)  
 Augusta Allobrogum : *see* Geneva  
 Augusta Taurinorum : *see* Taurinum  
 Augusta Vindelicorum : Augsburg, W. Germany  
 Aurelia, Aurelianum : Orléans, N. France (adj. *aurelianensis*)  
 Australia, Nova Hollandia : Australia (adj. *australiensis*)  
 Austria : Austria (Österreich) (adj. *austriacus*)  
 Avenio : Avignon, S. France  
 Bactria : N.E. Afghanistan (adj. *bactrianus*)  
 Baetica : Andalucia, S. Spain (adj. *baeticus*)  
 Baetis : Guadalquivir R., S. Spain  
 Bahusia : Bohuslän, S. Sweden (adj. *bahusiensis*)  
 Balaenae Sinus : Walvis Bay, S.W. Africa  
 Baleares : Balearic Islands, Spain (adj. *balearicus*)  
 Balneum Aponense : *see* Aponus  
 Balticum Fretum, Balticum Mare : The Sound (Öresund), Scandinavia  
 Banatus : Banat, former Austro-Hungarian crownland, roughly 20°-23° E.,  
     45°-46° N., Romania (adj. *banaticus*)

Barbaria : Barbary, i.e. N. Africa W. of Egypt  
 Barcino : Barcelona, N.E. Spain (adj. *barcinensis*)  
 Basilea, Basilia : Basel (Bâle), N. Switzerland (adj. *basiliensis*)  
 Batavia : Dutch Netherlands (adj. *batavus*)  
 Bathonia : Bath, S.W. England (adj. *bathoniensis*)  
 Bavaria : Bavaria (Bayern), W. Germany (adj. *bavaricus*)  
 Belgia : Belgium  
 Belgium : Netherlands, i.e. the Dutch Netherlands (Belgium Confederatum;  
     Belgium Foederatum) and modern Belgium (Belgium Austriacum;  
     Belgia ; Brabantia et Flandria) (adj. *belgicus*)  
 Bellilua, Balliolum : Bailleul, N. France  
 Belutchia : Baluchistan, West Pakistan  
 Benacns Lacus : Lago di Garda, N. Italy  
 Benghala : Bengal, India and Pakistan (adj. *benghalensis*)  
 Berna : Bern, Switzerland  
 Berolinum : Berlin, Germany (adj. *berolinensis*)  
 Bertiscus : North Albanian Alps, Albania and Yugoslavia  
 Berytus : Berit Dağı (Berytdagh), Central Turkey, Asia Minor (adj. *berytius*)  
 Berytus : Beirut, Lebanon (adj. *berytensis*, *berytheus*)  
 Bipontium : Zweibrücken, W. Germany (adj. *bipontinus*)  
 Birmania : *see* Burma  
 Biscaria : Vizcaya, N. Spain  
 Bisnagaria : S. India, former kingdom of Vijayanagar  
 Bithynia : N.W. Turkey, Asia Minor (adj. *bithynicus*, *bithynus*)  
 Blekingia : Blekinge, S. Sweden  
 Blesae : Blois, N. France (adj. *blesensis*)  
 Bodamicus Lacus, Brigantinus Lacus : Lake Constance (Boden See)  
 Boeotia : Voiotia, mid Greece (adj. *boeoticus*)  
 Bohemia : Bohemia, W. Czechoslovakia (adj. *bohemicus*)  
 Bolonia : Boulogne, N.E. France (adj. *boloniensis*)  
 Bonaria, Bonaeropolis : Buenos Aires, Argentina (adj. *bonariensis*)  
 Bonna : Bonn, W. Germany (adj. *bonnensis*)  
 Bononia : Bologna, N. Italy (adj. *bononiensis*)  
 Borbonia Insula : Réunion, Mascarenes (adj. *borbonicus*)  
 Borussia : East Prussia, now Poland and U.S.S.R.  
 Borysthenes : Dnieper R., U.S.S.R. (adj. *borysthenicus*)  
 Bottnicus Sinus : Gulf of Bothnia, Scandinavia (adj. *bottnicus*)  
 Brabantia : Brabant, Belgium  
 Brasilia : Brazil (adj. *brasiliensis*)  
 Brigantinus Lacus : *see* Bodamicus Lacus  
 Brigantium : Briançon, S.E. France ; Bregenz, Austria  
 Britannia : Britain (adj. *britannicus*)  
 Brugae : Bruges (Brugge), Belgium  
 Brunna : Brno (Brünn), Czechoslovakia  
 Brunsviga, Brunswiga : Brunswick (Braunschweig), W. Germany (adj.  
     *brunsvicensis*)  
 Bruxella : Brussels (Bruxelles, Brussel), Belgium

Buda : Buda, west bank of Danube, Hungary  
 Budapestinum : Budapest (i.e. Buda and Pest on east bank of Danube), Hungary  
 Burdigala : Bordeaux, S.W. France (adj. *burdigalensis*)  
 Burgundia : Burgundy (Bourgogne), E. France  
 Burma, Birmania : Burma (adj. *burmanicus*)  
 Byzantium, Constantinopolis : Istanbul, European Turkey (adj. *byzantinus*, *constantinopolitanus*)  
 Cadmus : Babadağ, S.W. Turkey, Asia Minor (adj. *cadmicus*)  
 Cadomum : Caen, N. France  
 Caesarea Insula : *see* Jersea  
 Caesarea Mazaca : Kayseri, central Turkey, Asia Minor  
 Caffraria : S. Africa (adj. *caffer*)  
 Cairum, Cairus : Cairo, Egypt (adj. *cairicus*, *kahiricus*)  
 Calabria : Calabria, S. Italy (adj. *calabricus*)  
 Caledonia, Scotia : Scotland (adj. *caledonicus*, *scoticus*)  
 Calpe : Gibraltar, S. Spain (adj. *calpensis*, *gibraltaricus*)  
 Cambria, Cambro-britannia, Wallia : Wales (adj. *cambrensis*, *cambricus*)  
 Campechia : Campeche, S.E. Mexico (adj. *campechanus*)  
 Camschata : Kamchatka, U.S.S.R. (adj. *camschatensis*)  
 Canaria : Gran Canaria or the Canary Islands (Fortunatae Insulae, Insulae Canarienses) as a whole (adj. *canariensis*)  
 Cantabria : Cantabria, N. Spain (adj. *cantabricus*)  
 Cantabrigia : Cambridge, England (adj. *cantabrigiensis*)  
 Cantabrigia Novae Angliae : Cambridge, Mass., U.S.A.  
 Cantia, Cantium : Kent, S. England (adj. *cantianus*)  
 Cappadocia : region of central Turkey, Asia Minor (adj. *cappadocicus*)  
 Caput Bonae Spei, Cap. B. Spei : Cape of Good Hope, S. Africa (adj. *capensis*)  
 Caria : A region of S.W. Asia Minor (adj. *caricus*)  
 Caribaeae, Caribae Insulae : Lesser Antilles, W. Indies (adj. *caribaeus*)  
 Carinthia : Carinthia (Kärnten), S. Austria (adj. *carinthiacus*)  
 Carmelus : Mt. Carmel, Israel, Palestine  
 Carniola : Carniola, former Austrian crownland, N. Yugoslavia (adj. *carniolicus*)  
 Carolina : Carolina, U.S.A. (adj. *carolinus*, *carolinensis*, *carolinianus*)  
 Carolsruha : Karlsruhe, W. Germany (adj. *carolsruanus*, *caroliquetanus*)  
 Carpathus Mons : The Carpathians, E. Europe (adj. *carpathicus*, *carpaticus*)  
 Carpetani Montes : Cordillera central of Spain (adj. *carpetanus*)  
 Carthagena : Cartagena, N. Colombia (adj. *carthaginensis*)  
 Cashmeria : Kashmir (adj. *cachemirianus*, *cashmerianus*)  
 Caspian Mare : *see* Mare Caspium  
 Cassella, Cassellum : Kassel, W. Germany  
 Cassubia : region around Danzig (Gdansk), Poland (adj. *cassubicus*)  
 Castella : Castile (Castilla), Spain (adj. *castellanus*)  
 Castella Nova : New Castile (Castilla la Nueva), Spain  
 Castella Vetus : Old Castile (Castilla la Vieja), Spain  
 Castulo : Cazorla, Andalucia, S. Spain

Castulonensis Saltus : Sierra de Cazorla, Andalucia, S. Spain (adj. *castulonensis*, *cazorlensis*)  
 Catauna : Catalonia (Cataluña), N.E. Spain (adj. *catalaunicus*)  
 Cataonia : region of central Turkey, Asia Minor (adj. *cataonicus*)  
 Caucasia : The Caucasus, U.S.S.R. (adj. *caucasicus*)  
 Ceylona : *see* Zeylona  
 Charidemum : Cabo de Gata, near Almeria, S.E. Spain  
 Charkovia : Kharkov, Ukraine, U.S.S.R.  
 Chersonesus Taurica : *see* Tauria  
 Chilonium : *see* Kilia  
 Christiana : Oslo, S. Norway (adj. *osloensis*)  
 Cilicia : region of S. Asia Minor (adj. *cilicicus*)  
 Codanus Sinus : Kattegat, between Denmark and Sweden  
 Colberga : Kolberg (Kolobrzag), W. Poland  
 Colonia, Colonia Agrippina : Cologne (Köln), W. Germany  
 Colonia Allobrogum : *see* Geneva  
 Conimbrica : Coimbra, Portugal (adj. *conimbricensis*)  
 Constantinopolis : *see* Byzantium  
 Cornubia : Cornwall, S.W. England (adj. *cornubiensis*)  
 Corsica : Corsica (Corse), France (adj. *corsicus*)  
 Cracovia : Krakow, Poland  
 Cremsa : Krems, N. Austria  
 Creta : Crete, Greece (adj. *creticus*, *cretensis*)  
 Crocodilorum Insula : one of the Paikuen islands, Fukien, China  
 Curassao : Curaçao, Caribbean Sea (adj. *curassavicus*)  
 Cnria Rhaetorum : Chur, E. Switzerland  
 Curonia : Curland (Kurland, Kurzeme), S.E. Latvia, U.S.S.R.  
 Cyclades : Kikládhes, Greece  
 Cydonia Cretae : Canea, Crete  
 Cygnorum Fluvius : Swan River, Western Australia  
 Cyprus : Cyprus, E. Mediterranean Sea (adj. *cyprius*, *veneris*)  
 Cyrenaica, Cyrene : Cyrenaica, N.E. Libya, N. Africa  
 Dahuria : *see* Dauria  
 Dalecarlia : Dalarna, mid Sweden (adj. *dalecarlicus*)  
 Dalia : Dalsland, S. Sweden  
 Dania : Denmark (adj. *danicus*)  
 Dantiscum : *see* Gedanum  
 Danubius : Danube R. (Donau), Europe (adj. *danubialis*)  
 Dauria, Dahuria, Davuria : a region of S.E. Siberia, U.S.S.R. (adj. *dauricus*, *dahuricus*, *davuricus*)  
 Daventria : Deventer, Netherlands  
 Delphi Batavorum : Delft, Netherlands  
 Delphinatus : Dauphiné, E. France (adj. *delphinensis*)  
 Divionum : Dijon, E. France  
 Dresden : Dresden, E. Germany  
 Dyrrachium : Durazzo (Durrës), Albania (adj. *dyrrhachinus*)  
 Eboracum : York, N. England (adj. *eboracensis*)

Ebroudunum : Yverdon, W. Switzerland  
 Ebudae Insulae : The Hebrides, W. Scotland (adj. *ebudicus, hebridensis*)  
 Ecbatana : Hamadan, N.W. Iran  
 Edessa : Urfa, S.E. Turkey, Asia Minor  
 Edinum, Edinburgum : Edinburgh, Scotland (adj. *edinensis*)  
 Egyptus : *see* Aegyptus  
 Emodus, Emodi Montes : The Himalaya, of which the ancient Greeks knew only the western part (gen. *emodi*; adj. *emodensis, himalaicus, himalayensis*)  
 Erfordia, Erfurtum : Erfurt, E. Germany  
 Erlanga : Erlangen, W. Germany  
 Erythraeum Mare : *see* Mare Rubrum  
 Etruria, Hetruria : Tuscany (Toscana), N. Italy (adj. *etruscus*)  
 Euboea : Evvoi, S.E. Greece  
 Euganei Montes : Colli Euganei near Padua, N. Italy  
 Europa : Europe (adj. *europaeus*)  
 Europa Centralis, Europa Mediterranea : Central Europe  
 Eustadium : *see* Eystettum  
 Euxinum Mare, Pontus Euxinus : Black Sea  
 Exonia : Exeter, S. England (adj. *exoniensis*)  
 Eystettum, Eustadium : Eichstätt, Bavaria, W. Germany (adj. *eystettensis*)  
 Fabaria, Thermae Fabriae, Thermae Piperinae : Pfäfers, E. Switzerland  
 Faeroenses Insulae : The Faeroes (Faeröerne), (adj. *faeroensis*)  
 Faventia : Faenza, N. Italy  
 Fennia, Fenningia, Finnia, Finlandia : Finland (Suomi), (adj. *fennicus*)  
 Flandria : Flanders, Low Countries, i.e. now part of N.E. France, N. Belgium and W. Netherlands  
 Florentia : Florence (Firenze), N. Italy (adj. *florentinus*)  
 Flumen Januarii, Sebastianopolis : Rio de Janeiro, E. Brazil (adj. *fluminensis*)  
 Formosa : Taiwan, China (adj. *formosanus, taiwanensis*)  
 Fortunatae Insulae : Canary Islands ; *see* Canaria  
 Forum Livii, Forolivium : Forlì, N. Italy  
 Fractus Mons : *see* Pilatus Mons  
 Francofurtum ad Moenum : Frankfurt am Main, W. Germany  
 Francofurtum ad Oderum, Francofurtum ad Viadrum, Trajectum ad Viadrum : Frankfurt an der Oder, E. Germany  
 Francomia, Francia Teutonica : Franken, central Germany  
 Friburgum Brisgoviae : Freiburg im Breisgau, W. Germany  
 Friburgum Helvetiorum : Fribourg, Switzerland  
 Frisia : Friesland, W. Germany and E. Netherlands  
 Fuegia, Terra Ignis : Tierra del Fuego, Chile and Argentina (adj. *fuegianus*)  
 Furca Mons : Furka Pass, W. Switzerland  
 Gades : Cadiz, S. Spain (adj. *gaditanus*)  
 Gaditanum Fretum, Herculeum Fretum : Strait of Gibraltar  
 Gaetulia : Sahara, N. Africa (adj. *gaetulicus*)  
 Galatia : region of central Asia Minor (adj. *galaticus*)  
 Galitia : Galicia, S. Poland and S.W. Ukraine, U.S.S.R.  
 Gallecia : Galicia, N.W. Spain

Gallia : France (adj. *gallicus*)  
 Gallia Monspelii : southern France (Hérault) around Montpellier  
 Gallia Narbonensis : southern France (Aude) around Narbonne ; in Roman times all of southern France  
 Gallicum Fretum : Strait of Dover (Pas-de-Calais)  
 Galloprovincia, Provincia : Provence, S. France (adj. *provincialis*)  
 Gandavum : Gent (Gand), Belgium (adj. *gandavensis*)  
 Garganus Mons : Monte Gargano, Italy (adj. *garganicus*)  
 Gedanum, Dantiscum : Danzig (Gdansk), Poland (adj. *gedanensis*) ; *see* Cassubia  
 Gelria, Geldria : Gelderland, Netherlands (adj. *gelricus*)  
 Geneva, Augusta Allobrogum, Colonia Allobrogum : Geneva (Genève), Switzerland (adj. *genevensis, genavensis*)  
 Genua, Janna Ligurum : Genoa (Genova), N. Italy (adj. *januensis, genuensis*)  
 Georgia Australis : South Georgia, Antarctica  
 Germania : Germany (adj. *germanicus*)  
 Germanicopolis : Čankiri, N. Turkey, Asia Minor  
 Germanicum Mare : North Sea  
 Gestricia : Gästrikland, mid Sweden  
 Gevalia : Gävle, E. Sweden  
 Gippevicum, Gippeswicum : Ipswich, E. England  
 Gissa : Giessen, W. Germany (adj. *gissensis*)  
 Glascovium : Glasgow, S.W. Scotland  
 Glogovia : Glogow, W. Poland  
 Glottiana Vallis : Clydesdale, S. Scotland  
 Gorgades, Insulae Capitis Viridis : Cape Verde Islands, Atlantic Ocean (adj. *gorgoneus*)  
 Gorlicium : Görlitz, E. Germany  
 Gotha : Gotha, E. Germany  
 Gothia : Götland, S. Sweden  
 Gotlandia : island of Gotland, S. Sweden  
 Gotoburgum : Gothenburg (Göteborg), S. Sweden (adj. *gotoburgensis, gothoburgensis*)  
 Gotthardus : St. Gotthard Pass, mid Switzerland  
 Gottinga, Goettinga : Göttingen, W. Germany (adj. *gottingensis*)  
 Graecia : Greece (adj. *graecus, hellenicus*)  
 Granata : Granada, S. Spain (adj. *granatensis*) ; also used of New Granada, i.e. Colombia  
 Granatense Regnum : former kingdom of Granada, S. Spain  
 Gratianopolis : Grenoble, S.E. France (adj. *gratianopolitanus*)  
 Groenlandia : Greenland (adj. *groenlandicus*)  
 Groninga : Groningen, Netherlands (adj. *groningensis*)  
 Gryphiswaldia, Gryphia : Greifswald, E. Germany (adj. *gryficus*)  
 Guadalupa Insula : Guadeloupe, W. Indies (adj. *guadalupensis*)  
 Guelferbytum, Guelpherpitum : Wolfenbüttel, W. Germany  
 Guestphalia : Westfalen, W. Germany.  
 Guinea : W. tropical Africa (adj. *guineensis*)

Haemus Mons : Balkan Mts. (Stara Planina), Bulgaria

Hafnia, Havnia : Copenhagen (København), Denmark (adj. *hafniensis*)

Haga Comitis, Haga Comitum : The Hague (s' Gravenhage), Netherlands

Hala Magdeburgica, Hala Saxonum, Hala ad Salam : Halle an der Saale, E. Germany

Hallandia : Halland, S. Sweden

Hamburgum : Hamburg, W. Germany

Hannovera : Hannover, W. Germany (adj. *hannoveranus*)

Harcynia : *see* Hercynia

Harderovicum : Harderwijk, Netherlands

Harleum : Haarlem, Netherlands

Hassia : Hessen, W. Germany

Havnia : *see* Hafnia

Helsingforsia : Helsinki (Helsingfors), S. Finland

Helsingia : Hälsingland, S. Sweden

Helvetia : Switzerland (adj. *helveticus*)

Heripolis : *see* Wirceburgum

Herculeum Fretum : *see* Gadicum Fretum

Hercynia, Harcynia : Harz region, mid Germany (adj. *hercynicus*)

Hetruria : *see* Etruria

Hibernia, Irlandia : Ireland (adj. *hibernicus*, *iricus*, *irensis*)

Hierosolyma : Jerusalem, Palestine (adj. *hierosolymitanus*)

Hippolythum : St. Pölten, N. Austria

Hispahan : Esfahan, Iran

Hispalis : Sevilla, S. Spain (adj. *hispalensis*)

Hispania : Spain (adj. *hispanicus*)

Hispaniola, Sandominicana : Haiti and Dominican Republic, West Indies

Hollandia : Holland, Netherlands (adj. *hollandicus*)

Holmia, Stockholmia : Stockholm, S. Sweden (adj. *holmensis*)

Holsatia : Holstein, W. Germany (adj. *holsaticus*)

Hungaria : *see* Pannonia

Hybla : region of E. Sicily, Italy

Hydaspes : Jhelum R., W. Himalaya (gen. *hydaspidis*)

Hylaea : the wooded plain of the Amazon river, Brazil

Hyrcania : N. Persia bordering the Caspian Sea (adj. *hyrcanus*)

Iabada : *see* Java

Iapygia : Terra d'Otranto (heel of Italy), S. Italy

Iberia : Iberia, Caucasus, corresponding roughly to Georgia, U.S.S.R. (adj. *ibericus*)

Iberia : Iberian Peninsula, i.e. Spain and Portugal

Iberus : Ebro R., N. Spain

Icaria : island of Ikaria, Greece

Iconium : Konya, S. central Turkey, Asia Minor

Illyria, Illyrium : E. coastal region of Adriatic Sea from Trieste S. to N. Albania (adj. *illyricus*)

Ilva : Elba, Italy (adj. *ilvensis*)

India : Indian subcontinent or the Indies (adj. *indicus*)

India occidentalis : *see* Antillae

India orientalis : India and the East Indies

Indiae, India utraque : both East Indies and West Indies

Ingolstadium : Ingolstadt, W. Germany

Ingria : Leningrad region, U.S.S.R. (adj. *ingricus*)

Insubria : region of Lago Maggiore, Lago di Lugano and Lago di Como, N. of Milan, N. Italy and S. Switzerland (adj. *insubricus*)

Interlacum : Interlaken, W. Switzerland

Isauria : region of S. Turkey, Asia Minor (adj. *isauricus*)

Isca : Exe R., S.W. England (adj. *iscanus*)

Islandia : Iceland (adj. *islandicus*)

Jamaica : Jamaica, West Indies (adj. *jamaicensis*)

Japonia : Japan (adj. *japonicus*, *nipponicus*)

Java, Iabada : Java, Indonesia (adj. *javanicus*)

Jemtia : Jämtland, mid Sweden

Jena : Jena, E. Germany (adj. *jensis*)

Jersea, Caesarea Insula : Jersey, Channel Islands, Britain

Jura : Jura, S.E. France and N.W. Switzerland (adj. *jurassicus*)

Juressns Mons : Serra do Gerez, Portugal (gen. *juressi*)

Kasanum : Kazan, U.S.S.R.

Kilia, Kilonia, Chilonium : Kiel, W. Germany

Kurdistania : Kurdistan, S.E. Turkey and N. Iraq (adj. *kurdicus*)

Labacum : Ljubljana, N. Yugoslavia

Laconia : Lakonia, Peloponnisos, S. Greece (adj. *laconicus*)

Lapponia : Lapland, N. Scandinavia (adj. *lapponicus*)

Laurentianus Sinus : Gulf of St. Lawrence, Canada (adj. *laurentianus*)

Legio : León, N.W. Spain (adj. *legionensis*)

Lemanus Lacus : Lake of Geneva (Lac Léman), W. Switzerland

Lemgovia : Lemgo, W. Germany

Leodium : Liège, Belgium

Leopolis, Lemberga : Lvov, Ukraine, U.S.S.R. (adj. *leopolitanus*)

Leopardia : Leeuwarden, Netherlands

Libanus Mons : Lebanon range, Lebanon (gen. *libani*; adj. *libanoticus*; *libanensis* refers to Mt. Liban near Santiago de Cuba)

Liburnia : coastal region of Yugoslavia (adj. *liburnicus*)

Libya : Libya, N. Africa (adj. *libycus*); *see also* Cyrenaica, Marmarica, Tripolitania

Liguria : Liguria, N. Italy (adj. *ligusticus*)

Lipsia : Leipzig, E. Germany (adj. *lipsiensis*)

Lisbona : *see* Olisipo

Lombardia, Langobardia : Lombardy, N. Italy

Londinum : London, England (adj. *londinensis*)

Londinum Gothorum : *see* Lunda

Lotharingia : Lorraine, E. France

Lubeca : Lübeck, W. Germany

Lucilburgum : *see* Luxemburgum

Ludovicia : Louisiana or former Louisiana Territory, U.S.A. (adj. *ludovicianus, louisianus*)

Lugdunum : Lyon, S. France (adj. *lugdunensis*)

Lugdunum Batavorum, Leyda : Leiden, Netherlands (adj. *leydensis*)

Lunda, Londinum Gothorum : Lund, S. Sweden (adj. *lundensis*)

Lunella Galliae : Lunel, S. France

Lusatia : Lausitz, region between rivers Oder and Elbe, E. Germany

Lusitania, Portugallia : Portugal (adj. *lusitanicus*)

Lutetia Parisiorum : *see* Parisii

Luxemburgum, Lucilburgum : Luxembourg (Lützelburg) (adj. *luceburgensis*)

Lycaonia : region of central Turkey, Asia Minor (adj. *lycaonicus*)

Lycia : region of S.W. Turkey, Asia Minor (adj. *lycius*)

Lydia : region of W. Asia Minor (adj. *lydius*)

Macedonia : Macedonia, Balkan Peninsula, mostly between 20°-24° E., 40°-42° N. (adj. *macedonicus*)

Machlinium, Mechlinia : Mechelen (Malines), Belgium (adj. *mechlinensis*)

Maclovianae Insulae : Falkland Islands (adj. *maclovianus, falklandicus*)

Maclovium, Aletae : Saint-Malo, N.W. France (adj. *macloviensis*)

Madera : Madeira (adj. *maderensis*)

Maderaspata : Madras region, S. India (adj. *maderaspatanus*)

Madritum : *see* Matriatum

Magellanicum Fretum, Magellani Fretum : Strait of Magellan, Chile, S. South America (adj. *magellanicus*)

Malabar : Malabar, S.W. India (adj. *malabaricus*)

Mancunium : Manchester, England (adj. *mancuniensis*)

Manhemium : Mannheim, W. Germany

Maracanda : Samarkand, Uzbekistan, U.S.S.R.

Marburgum, Marpurgum : Marburg, W. Germany

Marchia Brandenburgica, Neomarchia : Brandenburg, E. Germany and W. Poland

Mare Album : White Sea, U.S.S.R.

Mare Caspium : Caspian Sea (adj. *caspicus, caspius*)

Mare Mediterraneum : Mediterranean Sea (adj. *mediterraneus*, midland, remote from the sea, hence also applied to plants of Central Europe)

Mare Mortuum : Dead Sea

Mare Rubrum, Mare Erythraeum, Sinus Arabicus : Red Sea

Margaretha : Isla de Margarita, Venezuela

Mariani Montes : Sierra Morena, S. Spain

Marilandia : Maryland, U.S.A. (adj. *mariannus, marilandicus*)

Marmarica : coastal region of Libya and Egypt between Derna and El Alamein (adj. *marmaricus*)

Maroccanum Regnum : Morocco, N. W. Africa (adj. *maroccanus*)

Marpurgum : *see* Marburgum

Martabania : Martaban district, S. Burma (adj. *martabanicus*)

Martinica : Martinique, West Indies (adj. *martinicensis*)

Massilia : Marseille, S. France (adj. *massilianus, massiliensis*)

Matriatum, Madritum : Madrid, Spain (adj. *matritensis*)

Mauritania : N.W. Africa (adj. *mauritanicus*)

Mechlinia : *see* Machlinium

Medelpadia : Medelpad, mid Sweden

Media : ill-defined region of W. Asia, with capital first at Rhagae (Tehran), later at Ecbatana (Hamadan), N. Iran

Mediolanum : Milan (Milano), N. Italy

Megalopolis : Mecklenburg, N. Germany (adj. *megalopolitanus*)

Melita : Malta (adj. *melitensis*)

Mervinia : Merioneth, N. Wales, Britain

Mesopotamia : the plain north of Babylon between rivers Euphrates and Tigris, Iraq

Messana : Messina, Sicily, Italy (adj. *messanensis*)

Messenia : Messinia, S. Greece (adj. *messeniensis*)

Michaelopolis : San Miguel de Allende, Mexico; also Archangel, U.S.S.R.

Misnia : Meissen, E. Germany

Moesia : region of mid Balkan Peninsula (adj. *moesiacus*)

Moguntia, Mognntiacum : Mainz, W. Germany

Moldavia : region between 26°-29° E., 46°-48° N., Romania and U.S.S.R. (adj. *moldavicus*)

Moluccae : Moluccas (Amboina, Ceram, etc.), Indonesia (adj. *moluccanus, moluccensis*)

Mona : Anglesey, N. Wales, Britain; Isle of Man, Britain (adj. *monensis*)

Monachum, Monachium : Munich (München), W. Germany (adj. *monacensis*)

Monoecem, Monago, Monoeci Portus : Monaco

Mons Fractus : *see* Pilatus Mons

Monspelgardum, Mons Biligardus : Montbéliard (Mümpelgard), E. France

Monspelium, Monspessulus : Montpellier, S. France (adj. *monspeliensis, monspeliacus, monspessulanus*)

Mosqua : Moscow (Moskva), U.S.S.R. (adj. *mosquensis*)

Muricum Regnum : Murcia, S. Spain (adj. *murcicus*)

Muschovia : Muscovy, i.e. European Russia, U.S.S.R.

Mysia : region of N.W. Turkey, Asia Minor (adj. *mysicus*)

Nanceium : Nancy, N.E. France

Nannetum : Nantes, N.W. France

Narbona : Narbonne, S. France (adj. *narbonensis*)

Natolia : *see* Anatolia

Nauplia : Náplion, S. Greece

Neapolis : Naples (Napoli), Italy (adj. *neapolitanus*)

Neerlandia : Netherlands (adj. *neerlandicus*)

Nemausus, Nemausum : Nîmes, S. France

Neocomum : Neuchâtel, Switzerland (adj. *neocomensis*)

Neomarchia : *see* Marchia Brandenburgica

Neoweda ad Rhenum : Neuwied, W. Germany

Nepalia : Nepal (adj. *nepalensis, napaulensis*)

Nericia : Närke, S. Sweden

Nicaea : Iznik, Bithynia, N.W. Turkey, Asia Minor

Nicaea Maritima : Nice, S.E. France (adj. *nicaeensis*) : this is the Nicaea of Allioni's *Flora Pedemontana* (1785); *Comitatus Nicaeensis*, Comté de Nice

Nidrosia : Trondheim, mid Norway

Nitiobrigum : *see* Agennum

Noricae Alpes : Eastern Alps (Hohe Tauern, etc.), Austria (adj. *noricus*)

Norimberga : Nuremberg (Nürnberg), W. Germany (adj. *norimbergensis*)

Norlandia : Norrland, N. Sweden

Normannia : Normandy, N. France

Norvegia : Norway (adj. *norvegicus*)

Norvicum : Norwich, E. England

Nova Anglia : New England, U.S.A.

Nova Caesarea : New Jersey, U.S.A.

Nova Granata : Colombia; but more often Gran Colombia (i.e. present Colombia, Ecuador and Venezuela)

Nova Hispania : Mexico (adj. *mexicanus*)

Nova Hollandia : *see* Australia

Nova Wallia Australis : New South Wales, Australia

Noveboracum : New York, U.S.A. (adj. *noveboracensis*)

Novum Castrum : Newcastle upon Tyne, N. England

Nubia : Sudan or N.E. Africa in general (adj. *nubicus*)

Numidia : N.E. Algeria (adj. *numidicus*)

Occitania : Languedoc, S. France (adj. *occitanicus*)

Oceanus Atlantici : Atlantic Ocean; *cf.* Atlas

Oelandia : island of Öland, S. Sweden (adj. *oelandicus*)

Oenipons : Innsbruck, Austria

Oerebroa : Örebro, S. Sweden

Olbia Galloprovinciae : Hyères, S. France (adj. *olbius*); *see* Stoechades

Olisipo, Olissipo, Ulyssipo, Lisbona : Lisbon (Lisboa), Portugal

Olympus : Olympus, a name applied to many lofty mountains of Greece, Asia Minor and even U.S.A. (adj. *olympicus*)

Olympus Bithynns : Uludağ, near Bursa N.W. Turkey, Asia Minor

Olympus Thessalus : Olimbos, N.E. Greece

Ora Eboris : Ivory Coast, W. tropical Africa

Orcades : Orkney, Scotland (adj. *orcadensis*)

Oruba : island of Aruba, Caribbean Sea (adj. *orubicus*)

Osca : Huesca, N. Spain (adj. *oscensis*)

Ostrobothnia : Österbotten, N.W. Finland

Ostrogothia : Östergötland, S. Sweden

Oxonia : Oxford, England (adj. *oxoniensis*)

Palatinatus : Palatinate (Pfalz), W. Germany (adj. *palatinus*)

Palestina, Palaestina : Palestine (adj. *palestinus*, *palaestinus*)

Palimbanum : Palembang, Sumatra, Indonesia

Pamphylia : region of S.W. Asia Minor (adj. *pamphylicus*)

Pannonia, Hungaria, Ungaria : Hungary (adj. *pannonicus*, *hungaricus*)

Panormus, Panormum : Palermo, Sicily, Italy (adj. *panormitanus*)

Paphlagonia : region of N. Turkey, Asia Minor (adj. *paphlagonicus*)

Papia, Ticinum : Pavia, N. Italy

Parisii, Lutetia Parisiorum : Paris, France (adj. *parisiensis*, *lutetianus*)

Pascha, Paschatis Insula : Easter Island, Pacific Ocean

Patavium : Padua (Padova), N. Italy (adj. *patavinus*)

Pedemontium : Piedmont, N. Italy (adj. *pedemontanus*)

Peloponnesus : Peloponnisos, S. Greece (adj. *peloponnesiacus*)

Pensylvania : Pennsylvania, U.S.A. (adj. *pensylvanicus*)

Persepolis : Persepolis, S. Iran (adj. *persepolitanus*)

Persia : Iran (adj. *persicus*, *iranicus*)

Persicus Sinus : Persian Gulf

Peruvia : Peru (adj. *peruvianus*)

Pestinum : Pest, Hungary; *see* Buda

Petropolis : Leningrad, U.S.S.R. (adj. *petropolitanus*)

Pharmacopolis : Parati, E. Brazil

Philippinae : Philippines (adj. *philippensis*, *philippinensis*)

Phrygia : region of W. Turkey, Asia Minor (adj. *phrygicus*)

Pictavium : Poitiers, N.W. France

Pilatus Mons, Mons Fractus : Pilatusberg, mid Switzerland

Pisidia : region of S.W. Turkey, Asia Minor (adj. *pisidicus*)

Podolia : Podolia, S.W. Ukraine, U.S.S.R. (adj. *podolicus*)

Polonia : Poland (adj. *polonicus*)

Ponteba : Pontebba, N. Italy

Pontus : region of N.E. Asia Minor (adj. *ponticus*)

Pontus Euxinus : *see* Euxinum Mare

Pontus Lazicns : extreme N.E. Turkey, Asia Minor

Portugallia : *see* Lusitania

Portus Lunae : Golfo della Spezia, W. Italy

Portus Lusitaniae, Portus Calensis : Porto, Portugal (adj. *portuensis*)

Posonium : Bratislava, Czechoslovakia

Praetutianus Ager : Abruzzi region, mid Italy (adj. *praetutianus*); *see* Aprutium

Praga : Prague (Praha), Czechoslovakia (adj. *pragensis*)

Promontorium Bonae Spei : *see* Caput Bonae Spei

Propontis : Sea of Marmara, Turkey (adj. *proponticus*)

Providentia : New Providence, Bahamas, W. Indies

Provincia : *see* Galloprovincia

Pyrenaei Montes : Pyrenees, France and Spain (adj. *pyrenaicus*, *pyrenaeus*)

Quatuor Pagorum Lacus : Vierwaldstätter See, near Luzern, Switzerland

Radinga : Reading, S. England

Ratisbona : Regensburg, W. Germany (adj. *ratisbonensis*)

Regiomontum : Kaliningrad, U.S.S.R., formerly Königsberg, E. Prussia (adj. *regiomontanus*)

Rhaeticae Alpes : Alps of E. Switzerland and W. Austria (adj. *rhaeticus*)

Rhenus : Rhine R. (adj. *rhenanus*)

Rhodanus : Rhône R.

Rhodus : Rhodes (Rodhos), Greece (adj. *rhodius*)

Roma : Rome (Roma), Italy (adj. *romanus*)

Romania : Romania (adj. *romanicus*)  
 Rossia : Russia, U.S.S.R. (adj. *rossicus*, *russicus*)  
 Rostochinm : Rostock, E. Germany  
 Roterodamum : Rotterdam, Netherlands  
 Rothomagus : Rouen, N. France (adj. *rothomagensis*)  
 Rnmelia : Rumili, former division of Ottoman Empire in Europe comprising S. Bulgaria, Greek Thrace and Turkish Thrace, used by Grisebach to cover Bulgaria, S. Yugoslavia, Albania and N. Greece (adj. *rumelicus*)  
 Ruscino : Perpignan, S.W. France (adj. *ruscinonensis*)  
 Rnthenia : S. European Russia, U.S.S.R. (adj. *ruthenicus*)  
 Sabanda : Savoy (Savoie), E. France (adj. *sabaudus*)  
 Sabbatia : Savona, N. Italy (adj. *sabbatius*)  
 Salisburgum : Salzburg, Austria (adj. *salisburgensis*)  
 Salmantica : Salamanca, N. Spain (adj. *salmanticus*, *salamanticensis*)  
 Salomonae Insulae : Solomon Islands, Pacific Ocean (adj. *salomonensis*)  
 Samara : Kuybyshev region, European U.S.S.R.  
 Sanctae Crncis Insnla : St. Croix, West Indies  
 Sancti Jacobi Insula : St. Jago (S. Iago), Cape Verde Islands, Atlantic Ocean (adj. *jacobaeus*)  
 Sandominicana : see Hispaniola  
 Sardes : Sart, W. Turkey (adj. *sardensis*)  
 Sardinia : Sardinia (Sardegna), Italy (adj. *sardous*)  
 Sarisberia : Salisbury, S. England (adj. *sarisberiensis*, also applied to plants of Salisbury, Rhodesia)  
 Sarmatia : eastern Europe, mostly European U.S.S.R. (adj. *sarmaticus*)  
 Sarnia : Guernsey, Channel Islands, Britain (adj. *sarniensis*)  
 Saxomia : Saxony (Sachsen), E. Germany (adj. *saxonicus*)  
 Scandia, Scandinavia : Scandinavia (adj. *scandicus*, *scandinavicus*)  
 Scania : Skåne, S. Sweden  
 Scardus : Šar Planina (Shardagh), S. Yugoslavia (adj. *scardicus*)  
 Scillonia : Isles of Scilly, S.W. England (adj. *scilloniensis*)  
 Sclavonia : Slavonia, N. Yugoslavia  
 Scotia : see Caledonia  
 Sebastianopolis : see Flumen Januarii  
 Sedinum : Stettin (Szczecin), W. Poland  
 Sedunum : Sion, W. Switzerland  
 Selandia : Zealand (Sjaelland), Denmark  
 Sena : Siena, N. Italy (adj. *senensis*)  
 Senegambia : W. tropical Africa (Senegal, Gambia, Portuguese Guinea, Guinea)  
 Sibiria : Siberia, U.S.S.R. (adj. *sibiricus*)  
 Sicilia : Sicily (adj. *siculus*)  
 Sina : China (adj. *sinensis*, *chinensis*, *cathayanus*)  
 Sinai : Sinai peninsula, Egypt (adj. *sinaiticus*, *sinaicus*)  
 Sipylus Mons : Sipuli Dağ, mountain near Manisa and Izmir, W. Turkey, Asia Minor (adj. *sipyleus*)  
 Sitcha : Sitka, Alaska, U.S.A. (adj. *sitchensis*)

Smolandia : Småland, S. Sweden  
 Smyrna : Izmir, W. Turkey, Asia Minor (adj. *smyrnaeus*)  
 Sogdiana : region of Central Asia, between the Amu Darya and Syr Darya rivers, U.S.S.R. (adj. *sogdianus*)  
 Solodurum : Solothurn, N. Switzerland  
 Sondershusa : Sondershausen, Switzerland  
 Songaria, Sungaria, Soongaria : Dzungaria, Sinkiang, Central Asia (adj. *songaricus*, etc.)  
 Sontius Flvins : Isonzo R., N. Italy (adj. *sonticus*)  
 Spetsbergia : Spitsbergen (Svalbard), Arctic Ocean  
 Sponhemium : Sponheim, near Kreuznach, W. Germany (adj. *sponhemicus*)  
 Stiria : Steiermark, Austria (adj. *stiriacus*)  
 Stockholma : see Holmia  
 Stoechades : Îles d'Hyères, S. France ; see Olbia Galloprovinciae  
 Stuttgardia : Stuttgart, S.W. Germany  
 Sudermannia : Södermanland, S. Sweden  
 Sudeti : Sudeten mountains, N.W. Czechoslovakia and S.W. Poland (adj. *sudeticus*)  
 Suecia, Svecia : Sweden (adj. *suecicus*)  
 Suevia : Swabia (Schwaben), S.W. Germany  
 Sungaria : see Songaria  
 Surinama : Surinam, S. America (adj. *surinamensis*)  
 Surrejanus Comitatus : Surrey, S. England (adj. *surrejanus*)  
 Susa : Shush, S.E. Iran (adj. *susianus*)  
 Syracuse : Syracuse (Siracusa), Sicily, Italy  
 Syria : Syria (adj. *syriacus*)  
 Tamesis : Thames R. ; S. England (gen. *tamesis*)  
 Tanais : Don R., U.S.S.R. (adj. *tanaicensis*)  
 Taprobane : see Zeylona  
 Tataria : Tataria ; in Linnaeus's time, Central Asia and European Russia east of the river Don, U.S.S.R. ; Little Tataray was the Black Sea region of U.S.S.R. east of the river Dnieper (adj. *tataricus*)  
 Taurerus Rastadiensis : Radstädter Tauern, W. Austria  
 Tauria, Chersonesus Taurica : Crimea (Krym), U.S.S.R. (adj. *tauricus*, *chersonensis*)  
 Taurinum, Augusta Tanrinorum : Turin (Torino), N. Italy (adj. *taurinensis*)  
 Taurus Mons : Taurus (Toros Dagları) mountains, S. Turkey, Asia Minor  
 Tergeste : Trieste, N. Italy (adj. *tergestinus*)  
 Terra Ignis : see Fuegia  
 Terra Nova : Newfoundland, Canada  
 Terulium : see Turolum  
 Thermae Carolinae, Aquae Carolinae : Carlsbad (Karlovy Vary), Czechoslovakia  
 Thermae Fabriae, Thermae Piperinae : see Fabaria  
 Thessalia : Thessalia, N. Greece (adj. *thessalus*)  
 Thracia : Thrace, mid Balkan Peninsula (adj. *thracicu*s)  
 Thuringia, Turingia : Thuringia (Thüringen), mid Germany (adj. *thuringiacus*)  
 Tiberis : Tiber R. (Tevere), Italy

Ticinum : *see* Papia

Tigurum, Turicum Helvetiorum : Zürich, N. Switzerland (adj. *turicensis*)

Tingitana : Tangier, N.W. Africa (adj. *tingitanus*)

Tirolia : Tirol, S. Austria and N. Italy (adj. *tirolensis*, *tyrolensis*)

Tmolus : Mt. Tmolos near Sardis, W. Turkey, Asia Minor

Toletum : Toledo, mid Spain (adj. *toletanus*)

Tolosa, Tholosa : Toulouse, S. France

Tornacum : Tournai, Belgium (adj. *tornacensis*)

Trajectum ad Mosam, Trajectus Mosae : Maastricht, Netherlands

Trajectum ad Rhenum, Ultrajectum : Utrecht, Netherlands

Trajectum ad Viadrum : Frankfurt an der Oder, E. Germany

Transwallia : Pembroke, Wales, Britain (adj. *transwallianus*)

Trapezus : Trebizond (Trabzon), N.E. Turkey (adj. *trapezuntinus*)

Tridentinae Alpes : Tridentine Alps, N. Italy

Tridentum : Trent (Trento), N. Italy

Trinitatis Insula, Trinitatum : Trinidad, West Indies (adj. *trinitatensis*, *trinitatis*)

Tripolitania : Tripolitania, N.W. Libya, N. Africa

Troas : Troad region, N.E. Turkey, Asia Minor

Tyrrhenum Mare : Tyrrhenian Sea, W. Mediterranean Sea

Tubinga : Tübingen, W. Germany (adj. *tubingensis*)

Tucumania : Argentina (misrendered as 'Turcomannia' by Linnaeus)

Turcia : Turkey (adj. *turcicus*)

Turicum Helvetiorum : *see* Tigurum

Turingia : *see* Thuringia

Turkestania : Turkistan, Central Asia, U.S.S.R. (adj. *turkestanicus*)

Turolnm, Terulinm : Teruel, E. Spain (adj. *turolensis*)

Ucrania : Ukraine, U.S.S.R. (adj. *ucranicus*)

Ultrajectum : *see* Trajectum ad Rhenum

Ulyssipo : *see* Olisipo

Ungaria : *see* Pannonia

Uplandia : Uppland, S. Sweden (adj. *uplandicus*)

Upsala : Uppsala, S. Sweden (adj. *upsaliensis*)

Urania : Urnerland, N.E. Switzerland

Valdia, Valdensis Pagus : canton of Vaud, W. Switzerland (adj. *valdensis*)

Valentia : Valencia, E. Spain (adj. *valentinus*)

Valentia Gallorum : Valence, S.E. France

Valentinum Regnum : kingdom of Valencia, E. Spain

Valesia, Valesiensis Ager : Valois, N.E. France

Vallesia : canton of Valais, W. Switzerland

Vallisoletum : Valladolid, N. Spain

Varsavia, Varsovia, Warsavia : Warsaw (Warszawa), Poland (adj. *varsavien-sis*, *warsaviensis*)

Vectis Insula : Isle of Wight, S. England (adj. *vectensis*)

Venetia : Veneto region, N. Italy (adj. *venetus*)

Venetia, Venetiae : Venice (Venezia), N. Italy

Venta Belgarum, Vinconia : Winchester, S. England

Verbanus Lacus : Lago Maggiore, N. Italy and Switzerland (adj. *verbanensis*)

Verona : Verona, N. Italy

Viadrus : Oder R., E. Germany

Vicentia : Vicenza, N. Italy

Vienna Allobrogum : Vienne, S.W. France (adj. *viennensis*)

Vienna Austriae : *see* Vindobona

Vincentii Insula : St. Vincent, West Indies

Vinconia : *see* Venta Belgarum

Vindobona, Vienna Austriae : Vienna (Wien), Austria (adj. *vindobonensis*)

Virtembergia : Württemberg, W. Germany

Visebada : Wiesbaden, W. Germany

Vitemberga : *see* Witeberga

Vratislavia : Wrocław (formerly Breslau), Poland

Wallia : *see* Cambria

Warsavia : *see* Varsavia

Wermelandia : Värmland, S. Sweden

Wessmania : Västmanland, S. Sweden

Westmonasterium : Westminster, London, England

Westrobothnia : N.E. Sweden

Westrogothia : Västergötland, S. Sweden

Wirceburgum, Heripolis : Würzburg, W. Germany

Witeberga, Vitemberga : Wittenberg, E. Germany

Yermutha : Great Yarmouth, E. England

Zacynthus : island of Zante (Zákynthos), Greece

Zeelandia : Zeeland, Netherlands

Zetlandia : Shetland Isles, Britain (adj. *zetlandicus*)

Zeylona, Ceylona, Taprobane : Ceylon (adj. *zeylanicus*, *ceylanicus*, *tapro-banicus*)

Zittavia Lusatorum : Zittau, E. Germany

## INDEX

Names such as Arabia, Austria, Bohemia, Calabria, Jamaica, of which the native or conventional English form is the same or almost the same as that used in botanical Latin, for the most part are not included in the following index to the above list. Names are arranged alphabetically without regard to diacritical marks.

AARGAU, Argovia ; Abano, Aponus ; Åbo, Aboa ; Abruzzi, Aprutium, Praetutianus Ager ; Abyssinia, Aethiopia ; Aegean Islands, Archipelagus ; Afghanistan, Afghania ; Africa, South, Aethiopia ; Agen, Agenum ; Ahvenanmaa, Åland, Aalandia ; Alep, Aleppo ; Algarve, Algarbia ; Alps, Alpes ; Alps, Eastern, Noricae Alpes, Rhaeticae Alpes ; Alps, Tridentine, Tridentinae Alpes ; Alsace, Alsatia ; Altdorf, Altoria ; Amsterdam, Amstelodamum ; Andalucia, Baetica ; Angermanland, Angermannia ; Angers, Andegavum ; Anglesey, Mona ; Ankara, Ancyra ; Annaberg, Anneberga ; Antilles, Antillae ; Antilles, Lesser, Caribaeae ; Antwerp, Antverpia ; Apennines, Apenninus ; Appenzell, Abbatis Cella ; Aquitane, Aquitania ; Aragon, Aragonia ;

Argentina, *Tucumania*; Arras, *Atrebatum*; Aruba, *Oruba*; Ascension Island, *Ascensionis Insula*; Atlantic Ocean, *Oceanus Atlanticus*; Atlas Mountains, *Atlas*; Augsburg, *Augusta Vindelicorum*; Auvergne, *Alvarnia*; Avellino, *Abellinum*; Avignon, *Avenio*; Azerbaijan, *Atropatene*.

BAILLEUL, *Bellilua*; Balkan Mountains, *Haemus Mons*; Baltic Sea, *Mare Balticum*; Baluchistan, *Beluchia*; Barcelona, *Barcino*; Basel, *Basilea*; Bath, *Bathonia*; Beirut, *Berythus*; Bengal, *Bengala*; Berlin, *Berolinum*; Bern, *Berna*; Berit Dağı, *Berytus*; Black Sea, *Euxinum Mare*; Blekinge, *Blekingia*; Blois, *Blesae*; Bodensee, *Bodamicus Lacus*; Bohuslän, *Bahusia*; Bologna, *Bononia*; Bonn, *Bonna*; Bordeaux, *Burdigala*; Bothnia, Gulf of, *Bottnicus Sinus*; Boulogne, *Bolonia*; Bourgogne, *Burgundia*; Brabant, *Brabantia*; Brandenburg, *Marchia Brandenburgica*; Bratislava, *Posonium*; Brazil, *Brasilia*; Bregenz, *Brigantium*; Breslau, *Vratislavia*; Briançon, *Brigantium*; Brittany, *Armorica*; Brno, *Brunna*; Bruges, *Brugae*; Brussels, *Bruxella*; Budapest, *Budapestinum*; Buenos Aires, *Bonaria*.

CABO DE GATA, *Charidemum*; Cadiz, *Gades*; Caen, *Cadomum*; Caernarvonshire, *Arvonia*; Cairo, *Cairum*; Cambridge, England, *Cantabrigia*; Cambridge, Mass., U.S.A., *Cantabrigia Novae Angliae*; Campeche, *Campechia*; Canary Islands, *Canaria*; Canea, *Cydonia*; Cankri, *Germanicopolis*; Cape of Good Hope, *Caput Bonae Spei*; Cape Verde Islands, *Gotgades*; Carpathians, *Carpathus Mons*; Carthagena, *Cartagena*; Caspian Sea, *Mare Caspium*; Castile, *Castella*; Castile, New, *Castella Nova*; Castile, Old, *Castella Vetus*; Catalonia, *Catalaunia*; Caucasus, *Caucasia*; Cazorla, *Castulo*; Ceylon, *Zeylona*; China, *Sina*; Chur, *Curia Rhaetorum*; Clydesdale, *Glottiana Vallis*; Coimbra, *Conimbrica*; Colli Eugani, *Enganei Monks*; Cologne, *Colonia*; Columbra, *Nova Granada*; Como, *Novo-Comum*; Constance, Lake, *Bodamicus Lacus*; Copenhagen, *Hafnia*; Cornwall, *Cornubia*; Crimea, *Tauria*; Curaçao, *Curassao*; Curland, *Curonia*.

DALARNA, *Dalecarlia*; Dalsland, *Dalia*; Danube, *Danubius*; Danzig, *Gedanum*; Dauphiné, *Delphinatus*; Daur, *Dauria*; Dead Sea, *Mare Mortuum*; Delft, *Delphi Batavorum*; Denmark, *Dania*; Deventer, *Daventria*; Dijon, *Divionum*; Dnieper, *Borysthenes*; Don, *Tanais*; Dresden, *Dresda*; Durazzo, *Dyrrhacium*; Dzungaria, *Songaria*.

EASTER ISLAND, *Pascha*; Ebro, *Iberus*; Ecuador, *Aequatoria*; Edinburgh, *Edinum*; Egypt, *Aegyptus*; Eichstätt, *Eystettum*; Elba, *Ilva*; England, *Anglia*; Erfurt, *Erfordia*; Erlangen, *Erlanga*; Etna, *Aetna*; Europe, *Europa*; Europe, Central, *Europa Centralis*; Evvoia, *Euboea*; Exe, *Isca*; Exeter, *Exonia*.

FAENZA, *Faventia*; Falkland Islands, *Maclovianae Insulae*; Finland, *Finlandia*; Florence, *Florentia*; Forli, *Forum Livii*; Franken, *Franconia*; Frankfurt am Main, *Francofurtum ad Moenum*; Frankfurt an der Oder, *Francofurtum ad Oderum*; Freiburg im Breisgau, *Friburgum Brisgoviae*; Fribourg (Freiburg), Switzerland, *Friburgum Helvetiorum*; Friesland, *Frisia*; Furka Pass, *Furca Mons*.

GALICIA (Spain), *Gallecia*; Galicia (E. Europe), *Galitiae*; Gargano, Monte, *Garganus Mons*; Gästrikland, *Gestricia*; Gävle, *Gevalia*; Gdansk, *Gedanum*, *Dantiscum*; Gdansk region, *Cassubia*; Gelderland, *Gelria*; Geneva, Lake of, *Lemanus Lacus*; Genoa, *Genua*; Gent, *Gandavum*; Gerez, *Serra do Jucessus Mons*; Germany, *Germania*; Gibraltar, *Calpe*; Gibraltar, Strait of, *Gaditanum Fretum*; Giessen, *Gissa*; Glasgow, *Glascovium*; Glogow, *Glogovia*; Görlitz, *Gorlicium*; Gothenburg, *Gotoburgum*; Götland, *Gothia*; Gotland, *Gotlandia*; Göttingen, *Gottinga*; Granada, *Granata*; Greenland, *Groenlandia*; Grieswald, *Gryphiswaldia*; Grenoble, *Gratianopolis*; Groningen, *Groninga*; Guadalquivir, *Baetis*; Guadalupe, *Guadalupa Insula*; Guernsey, *Sarnia*.

HAARLEM, *Harleum*; Hague, The, *Haga Comitis*; Halland, *Hallandia*; Halle an der Saale, *Hala Magdeburgica*; Hälsingland, *Helsingia*; Hamadan, *Ecbatana*;

Hamburg, *Hamburgum*; Hanover, *Hannovera*; Harderwijk, *Harderovicum*; Harz, *Hercynia*; Hebrides, *Ebudeae Insulae*; Helsinki, *Helsingforsia*; Hessen, *Hassia*; Himalaya, *Emodus*; Holland, *Hollandia*; Holstein, *Holsatia*; Huesca, *Osca*; Hungary, *Pannonia*; Hyères, *Olbia Galloprovinciae*; Hyères, *îles de Stoechades*.

ICELAND, *Islandia*; Indies, *Indiae*; Indies, East, *India Orientalis*; Indies, West, *Antillae*; Ingolstadt, *Ingolstadium*; Innsbruck, *Oenipons*; Interlaken, *Interlacum*; Ipswich, *Gippevicum*; Ireland, *Hibernia*; Isfahan, *Hispanah*; Isle of Wight, *Vectis I.*; Isonzo, *Sontius Fluvius*; Istanbul, *Byzantium*; Ivory Coast, *Ora Eboris*; Izmir, *Smyrna*; Iznik, *Nicaea*.

JÄMTLAND, *Jemtia*; Japan, *Japonia*; Jersey, *Jersea*; Jerusalem, *Hierosolyma*; Jhelum, *Hydaspes*.

KALININGRAD, *Regiomontum*; Kainchatka, *Camschatka*; Karlsruhe, *Carollsruha*; Kärnten, *Carinthia*; Kashmir, *Cashmeria*; Kassel, *Cassella*; Kattegat, *Codanus Sinus*; Kayseri, *Caesarea Mazaca*; Kent, *Canitia*; Kharkov, *Charkovia*; Kiel, *Kilia*; Kikladhes, *Cyclades*; Kolberg, *Colberga*; Königsberg, *Regiomontum*; Krakow, *Cracovia*; Krems, *Cremsa*; Kuybyshev, *Samara*.

LAGO DI GARDA, *Benacus*; Lago Maggiore, *Verbanus Lacus*; Lakonia, *Laconia*; Languedoc, *Occitania*; Lapland, *Lapponia*; Lausitz, *Lusatia*; Lebanon Range, *Libanus Mons*; Leeuwarden, *Leopardia*; Leiden, *Lugdunum Batavorum*; Leipzig, *Lipsia*; León, *Legio*; Leningrad, *Petropolis*; Leningrad Region, *Ingria*; Leyden, *Lugdunum Batavorum*; Libya, *Cyrenaica*, *Libya*, *Marmarica*, *Tripolitania*; Liège, *Leodium*; Lisbon, *Olisipo*; Ljubljana, *Labacum*; Lombardy, *Lombardia*; London, *Londinum*; Lorraine, *Lotharingia*; Louisiana, *Ludovicia*; Lübeck, *Lubeca*; Lund, *Lunda*; Lunel, *Lunella*; Luxembourg, *Luxemburgum*; Lvov, *Leopolis*; Lyon, *Lugdunum*.

MAASTRICHT, *Trajectum ad Mosam*; Madeira, *Madera*; Madras Region, *Maderaspata*; Madrid, *Matritum*; Mainz, *Moguntia*; Malta, *Melita*; Man, Isle of, *Mona*; Manchester, *Mancunium*; Mannheim, *Manhemium*; Margarita Island, *Margaretha*; Marmara, Sea of, *Propontis*; Marseille, *Massilia*; Martaban Region, *Martabania*; Maryland, *Marilandia*; Mechelen, *Machlinium*; Mecklenburg, *Megalopolis*; Medelpad, *Medelpadia*; Mediterranean Sea, *Mare Mediterraneum*; Meissen, *Misnia*; Merioneth, *Mervinia*; Messina, *Messana*; Mexico, *Nova Hispania*; Milan, *Mediolanum*; Moluccas, *Moluccae*; Monaco, *Monoecum*; Montbéliard, *Monspelgardum*; Montpellier, *Monspelium*; Moscow, *Mosqua*; Munich, *Monachum*; Morocco, *Maroccanum Regnum*; Murcia, *Murcicum Regnum*.

NANCY, *Nanceium*; Nantes, *Nannetum*; Naples, *Neapolis*; Narbonne, *Narbona*; Närke, *Nericia*; Náplion, *Nauplia*; Nepal, *Nepalia*; Netherlands, *Batavia*, *Belgium*, *Hollandia*, *Neerlandia*; Neuwied, *Neoweda ad Rhenum*; New England, *Nova Anglia*; New Jersey, *Nova Caesarea*; New Providence, *Providentia*; New South Wales, *Nova Wallia Australis*; New York, *Noveboracum*; Newcastle upon Tyne, *Novum Castrum*; Newfoundland, *Terra Nova*; Nice, *Nicaea Maritima*; Nikaria, *Icaria*; Nîmes, *Nemausus*, *Nemauisum*; Normandy, *Normannia*; North Sea, *Germanicum Mare*; Norrland, *Norlandia*; Norway, *Norvegia*; Norwich, *Norvicum*; Nova Scotia, *Acadia*; Nuremberg, *Norimberga*.

ODER, *Viadrus*; Oland, *Oelandia*; Olimbos, *Olympus*; Oporto, *Portus Lusitaniae*; Örebro, *Oerebroa*; Oresund, *Balticum Fretum*; Orkneys, *Orcades*; Orléans, *Aurelia*; Oslo, *Christiana*; Ostergötland, *Ostrogothia*; Oxford, *Oxonia*.

PADUA, *Patavium*; Paikuen Islands, *Crocodilorum Insula*; Palatiinate, *Palatinatus*; Palembang, *Palimbuanum*; Palermo, *Panormus*; Palestine, *Palestina*; Parati, *Pharmacopolis*; Paris, *Parisii*; Pavia, *Papia*; Pembroke, *Transwallia*; Pennsylvania, *Pensylvania*; Perpignan, *Ruscino*; Peru, *Peruvia*; Pest, *Pestinum*;

Pfäfers, *Fabaria*; Pfalz, *Palatinatus*; Philippines, *Philippinae*; Piedmont, *Pedemontum*; Pilatusberg, *Pilatus Mons*; Poitiers, *Pictavium*; Poland, *Polonia*; Porto, *Portus Lusitaniae*; Portugal, *Lusitania*; Prague, *Praga*; Provence, *Galloprovincia*; Prussia, *Borussia*; Puebla, *Angelopolis*; Pyrenees, *Pyrenaei Montes*.

QUEEN CHARLOTTE'S SOUND, *Aestuarium Reginae Charlottae*.

RADSTÄDTER TAUERN, *Taurerus Rastadiensis*; Reading, *Radinga*; Red Sea, *Mare Rubrum*; Regensburg, *Ratisbona*; Réunion, *Borbonia Insula*; Rhine, *Rhenus*; Rhodes, *Rhodus*; Rhône, *Rhodanus*; Rio de Janeiro, *Flumen Januarii*; Riviera, *Liguria*; Rome, *Roma*; Rostock, *Rostochium*; Rotterdam, *Roterodamum*; Rouen, *Rothomagus*; Roumania, *Romania*; Russia, *Russia*, *Ruthenia*.

SAHARA, *Gaetulia*; Saint-Malo, *Maclovium*; Sainte-Croix, *Sanctae Crucis Insula*; St. Jago, *Sancti Jacobi Insula*; St. Pölten, *Hippolythum*; St. Vincent, *Vincentii Insula*; Salamanca, *Salmantica*; Salisbury, *Sarisberia*; Salzburg, *Salisburgum*; Samarkand, *Maracanda*; San Miguel de Allende, *Michaelopolis*; Savona, *Sabbatia*; Savoy, *Allobrogicae Alpes*, *Sabauda*; Saxony, *Saxonia*; Schwaben, *Suevia*; Scilly Isles, *Scillonia*; Scotland, *Caledonia*; Sevilla, *Hispalis*; Shetland Isles, *Zetlandia*; Shush, *Susa*; Sicily, *Sicilia*; Sienna, *Sena*; Sion, *Sedunum*; Sipuli Dağ, *Sipylus Mons*; Siracusa, *Syracusae*; Sitka, *Sitcha*; Skåne, *Scania*; Slavonia, *Sclavonia*; Småland, *Smolandia*; Snowdon Range, *Arvonicae Alpes*; Södermanland, *Sudermannia*; Solomon Islands, *Salomonae Insulae*; Solothurn, *Solodurum*; Sonderhausen, *Sonderhusa*; Sound, The, *Balticum Fretum*; South Africa, *Caffraria*; Spain, *Hispania*; Spitsbergen, *Spetsbergia*; Sponheim, *Sponhemium*; Stara Planina, *Haemus Mons*; Stettin, *Sedunum*; Steiermark, *Stiria*; Stockholm, *Holmia*; Strait of Gibraltar, *Gaditanum Fretum*; Strasbourg, *Argentoratum*; Stuttgart, *Stuttgardia*; Sudan, *Nubia*; Sudeten, *Sudeti*; Surinam, *Surinama*; Surrey, *Surrejanus Comitatus*; Swabia, *Suevia*; Swan River, *Cygnorum Fluvius*; Sweden, *Suecia*; Switzerland, *Helvetia*; Syracuse, *Syracusae*; Szczecin, *Sedunum*.

TANGIER, *Tingitana*; Tatar, *Tataria*; Taurus Mountains, *Taurus Mons*; Terra d'Otranto, *Iapygia*; Tervel, *Torulum*; Thames, *Tamesis*; Thessaly, *Thessalia*; Thrace, *Thracia*; Thüringen, *Thuringia*; Tiber, *Tiberis*; Tierra del Fuego, *Fuegia*; Toledo, *Toletum*; Tonga Isles, *Amicorum Insulae*; Toulouse, *Tolosa*; Tournai, *Tornacum*; Trapzon, *Trebizond*, *Trapezus*; Trento, *Tridentum*; Tridentine Alps, *Tridentinae Alpes*; Trieste, *Tergeste*; Trinidad, *Trinitatis Insula*; Troad, *Troas*; Trondheim, *Nidrosia*; Tübingen, *Tubinga*; Turin, *Taurinum*; Turkey, *Anatolia*, *Thracia*, *Turcia*; Turkistan, *Turkestania*; Turku, *Aboa*; Tuscany, *Etruria*; Tyrol, *Tirolia*; Tyrrhenian Sea, *Tyrrhenum Mare*.

UKRAINE, *Ucrania*; Uludağ, *Olympus Bithynus*; Uppland, *Uplandia*; Uppsala, *Upsala*; Urnerland, *Urania*; Urfa, *Edessa*; Utrecht, *Trajectum ad Rhenum*.

VALAIS, *Vallesia*; Valence, *Valentia Gallorum*; Valencia (town), *Valentia*; Valencia (kingdom), *Valentinum Regnum*; Valladolid, *Vallisoletum*; Valois, *Valesia*; Värmland, *Wermelandia*; Västergötland, *Westrogothia*; Västmanland, *Wessmania*; Vaud, *Valdia*; Venice, *Venetia*; Vicenza, *Vicentia*; Vienna, *Vindobona*; Vienne, *Vienna Allobrogum*; Vierwaldstätter See, *Quatuor Pagorum Lacus*; Vijayanagar, *Bisnagaria*; Vizcaya, *Biscaria*.

WALES, *Cambria*; Walvis Bay, *Balaenae Sinus*; Warsaw, *Varsavia*; West Indies, *Antillae*; Westfalen, *Guestphalia*; Westminster, *Westmonasterium*; White Sea, *Mare Album*; Wiesbaden, *Visebada*; Winchester, *Venta Belgarum*; Wittenberg, *Witeberga*; Wolfenbüttel, *Guelferbytum*; Wrocław, *Vratislavia*; Württemberg, *Virtembergia*; Wurzburg, *Wircebburgum*.

YARMOUTH, *Yermutha*; York, *Eboracum*; Yverdon, *Ebrodunum*.

ZANTE, *Zacynthus*; Zealand (Denmark), *Selandia*; Zeeland (Netherlands), *Zeelandia*; Zittau, *Zittavia Lusatorum*; Zürich, *Tigurum*; Zweibrücken, *Bipontium*.

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## CHAPTER XVIII

## Colour Terms

... a fisher, on the sand  
By Tyre the Old, with ocean-plunder,  
A netful, brought to land. . . .

Yet there's the dye, in that rough mesh,  
The sea has only just o'er-whispered!  
Live whelks, each lip's beard dripping fresh,  
As if they still the water's lisp heard  
Through foam the rock-weeds thresh. . . .

Mere conchs! not fit for warf or woof!  
Till cunning comes to pound and squeeze  
And clarify—refine to proof  
The liquor filtered by degrees,  
While the world stands aloof. . . .

Who fished the murex up?  
What porridge had John Keats?

BROWNING, *Popularity* (1842)

Vagueness of ancient colour terms, p. 236—Ancient dyestuffs and colour terms, p. 237—Colour nomenclature and charts, p. 239—List of Latin colour terms taken from Lindley (1832) and Jackson (1899), p. 242—Colourless and white, p. 243—Grey, p. 244—Black, p. 245—Brown, p. 245—Yellow and Orange, p. 246—Green, p. 247—Blue, violet and purple, p. 248—Red, p. 249—Vague terms, p. 250—Variegations, markings and quality, p. 251—Index, p. 251—Qualifying words, p. 253—Elias Fries's nomenclature of colours for fungi, p. 253—References, p. 258.

## VAGUENESS OF ANCIENT COLOUR TERMS

Out of the dyestuff and pigment industries of the ancient Mediterranean world have come many colour terms used in botanical Latin, and to this origin is due in part their vagueness of application. As emphasized by Dade (1949), the colours of minerals vary and 'dyes produce different effects according to the mode of their preparation, the materials dyed, and the methods and mordants employed; naturally then the colour conceptions corresponding with the names of these pigments

are very broad'. Thus, although the basic colour terms used in botanical Latin were used by the ancients, their application was not necessarily the same then as now. J. König (1927) listed 51 Greek names for colours and 77 Latin ones. Their application has, however, to be guessed from literary references which for the most part are incidental and vague. Homer's certainly odd use of expressions relating to colour led W. E. Gladstone to argue in 1858 that the ancient Greeks were deficient in colour perception. The chemist Sir Humphry Davy had, however, earlier concluded that 'the Greek and Roman painters had almost the same colours as those employed by the great Italian masters at the period of the revival of the arts in Italy. They had indeed the advantage over them in two colours, the Vestorian or Egyptian azure and the Tyrian or marine purple.' The despised dyers, clothiers, artists, decorators and cavalry-men of antiquity, indeed all who in their callings then used colour terms with precision, must have had specialized vocabularies which have left little or no literary record. Colour names as used by poets tend to be metaphorically or indefinitely applied. The lack of colour terms indicates a lack of need, rather than a lack of ability, to perceive and discriminate. The development of a colour vocabulary depends largely upon progress in extracting and manufacturing dyestuffs and paints with consistent results. It is for this reason that modern botanists possess means of precision in colour designation hardly available before the twentieth century.

## ANCIENT DYESTUFFS AND COLOUR TERMS

The most celebrated of the ancient dyestuffs was the Tyrian purple, which has given botanical Latin the terms *purpureus*, *phoeniceus*, *puniceus*, *tyrius* and *porphyreus*, the dye of Browning's poem quoted above. Embedded in their soft tissue, certain marine gastropod prosobranch molluscs, notably *Murex brandaris*, *Murex trunculus* and *Thais haemastoma* (*Purpura haemastoma*), (Fig. 14), have a small oblong hypobranchial gland which secretes a viscid colourless fluid. On exposure to light, however, this molluscan liquid turns yellow and green, then changes to bluish red colours, that of *M. brandaris* becoming deep blue-violet, that of *M. trunculus* and *T. haemastoma* scarlet (cf. Forbes, 1956, also Bouchilloux & Roche, 1955), at the same time giving out a vile penetrating stench. From it the dyers of antiquity made their most costly dye, the purple of Imperial robes and aristocratic togas, known to the Greeks as *πορφύρα* (*porphyra*), to the Romans as *purpura*, which apparently was not purple as now understood but crimson. Some 8,000 snails of *Murex brandaris* together yielded 1 gram of dye. Piles of broken shells around Mediterranean coasts

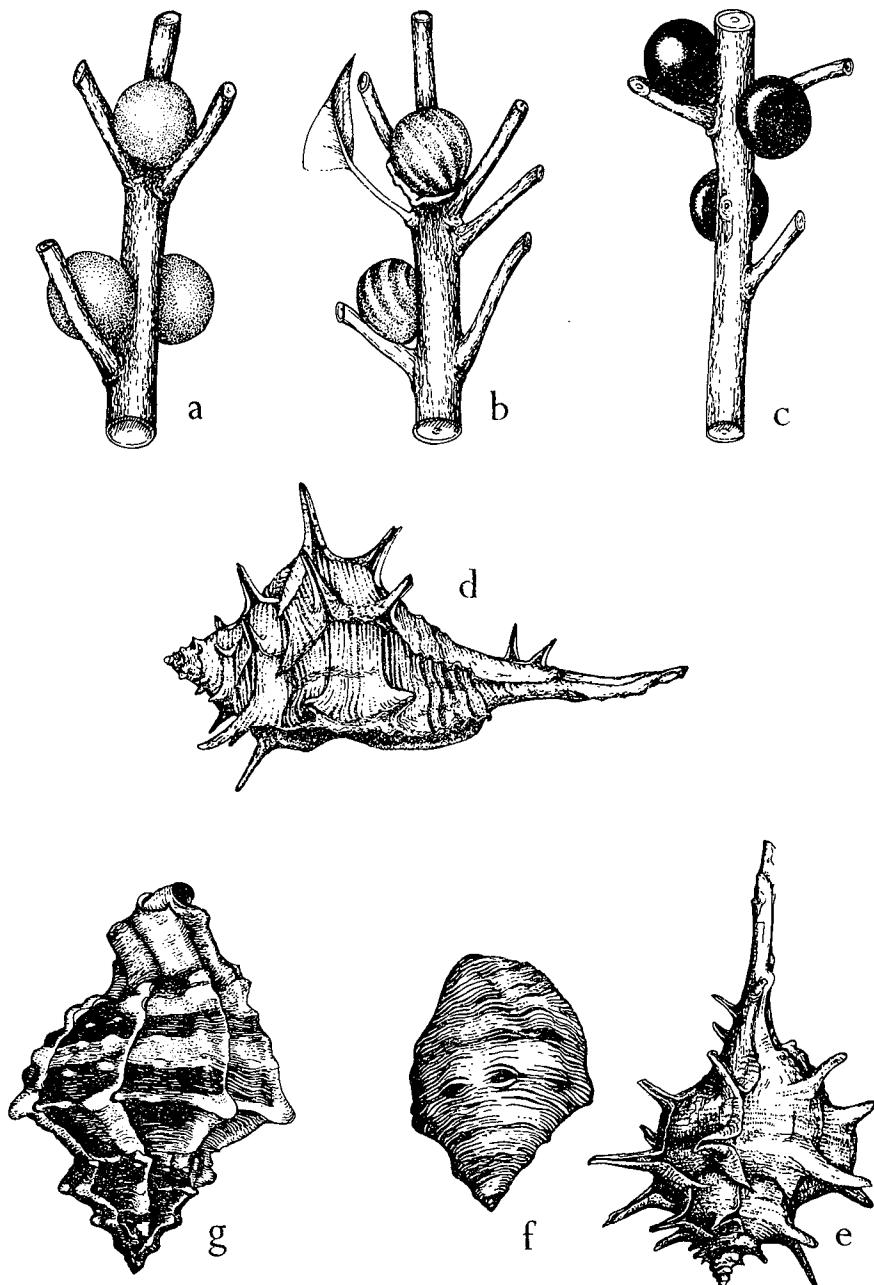


Fig. 14 Sources of ancient Dyes

a, *Kermes vermilio* Planchon f. *typica* ♀; b, *Kermes vermilio* f. *ballotae* ♀; c, *Kermes ilicis* L. ♀ (after A. Balachowsky, 1950); d, e, *Murex brandaris* L.; f, *Thais haemastoma* (L.); g, *Murex trunculus* L. (drawing by Priscilla Fawcett)

indicate where, long ago, Cretans, Phoenicians, Greeks and Romans fished the murex up and extracted its marine purple (cf. J. W. Jackson, 1916). On more than one coast prehistoric fishermen gathering these shellfish for food must have independently discovered their purple-producing secretion, but the Phoenician cities of Tyre and Sidon (Saida) were most responsible for its exploitation on a large scale and the elaboration of the techniques whereby it yielded a variety of red and purple colours (cf. Lacaze-Duthiers, 1859; Forbes, 1956). Their manufacturing secrets were lost when the Arabs destroyed the dyeworks in A.D. 638.

Another source of red dyes in antiquity was provided by the oak-infesting coccid insects, *Kermes vermilio* (*Kermococcus vermilio*), which lives on *Quercus coccifera*, *Q. ilex* and *Q. suber*, and *Kermes ilicis* (*Kermococcus bauhini*), which lives mostly on *Quercus ilex*, sometimes on *Q. suber* in the Mediterranean region (cf. Balachowsky, 1950). The dye was obtained from the female insects swollen with eggs soon to hatch (Fig. 14). The ancients at one time regarded these globular gravid females clinging to twigs of oak (Balachowsky, p. 754, figs. 47 and 48) as a kind of berry (in Greek *kokkos*, Latin *coccus*), hence the adjective *coccineus* applied to the scarlet or crimson colour obtained from them. It was also recognized that these grains were a kind of insect or *vermiculus* (little worm), whence the name 'vermilion'. The insect itself later became known by the oriental name *kermes* (derived from Sanskrit *kr̥mis*, old Persian *kerema* worm), from which the adjectives *kermesinus*, *chermesinus* and *carmineus* applied to carmine are derived. There exists a number of other Latin words for red colours, e.g. *ruber* (red), *sanguineus* (blood red), *roseus* (rose), *miniatus* (scarlet), *cerasinus* (cherry red), there being many substances in nature from which these can be produced, and also for yellows, e.g. *croceus* (saffron), *luteus* (yellow), *flavus* (yellow), *aureus* (golden), *cereus* (wax yellow), *sulphureus* (sulphur), *melleus* (honey yellow). An important source of yellow dye was the plant *lutum* (weld, *Reseda luteola*), (Fig. 8, p. 145), whence the term *luteus*. There are fewer words for green and blue. According to Kober (1932), 'it is undoubtedly because it was so hard for the ancients to produce blue and green that we have so few words for these colours'. Latin is also deficient in words for grey and brown; both *griseus* and *brunneus* used in botanical Latin are of German origin.

#### COLOUR NOMENCLATURE AND CHARTS

The application, etymology, etc., of terms for colour used by the Greeks and Romans are discussed by André (1949), Blumner (1892),

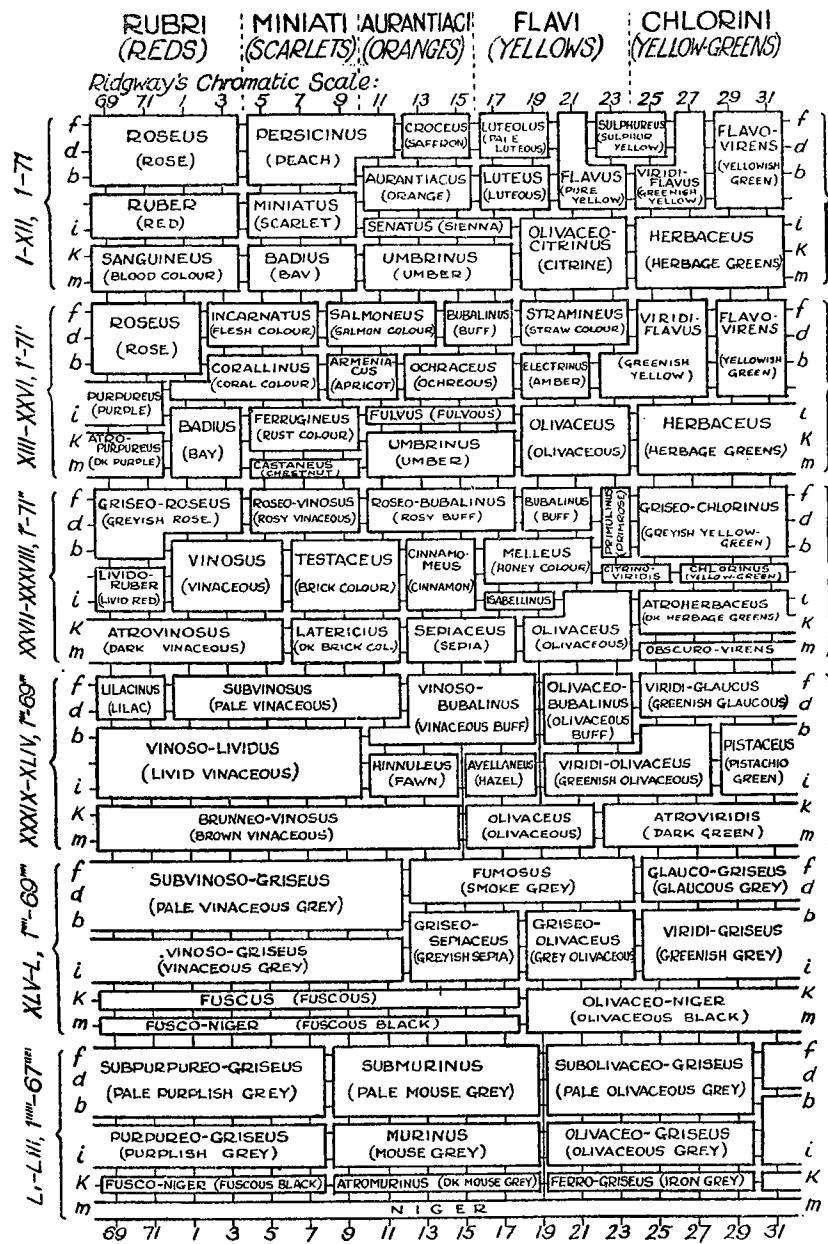
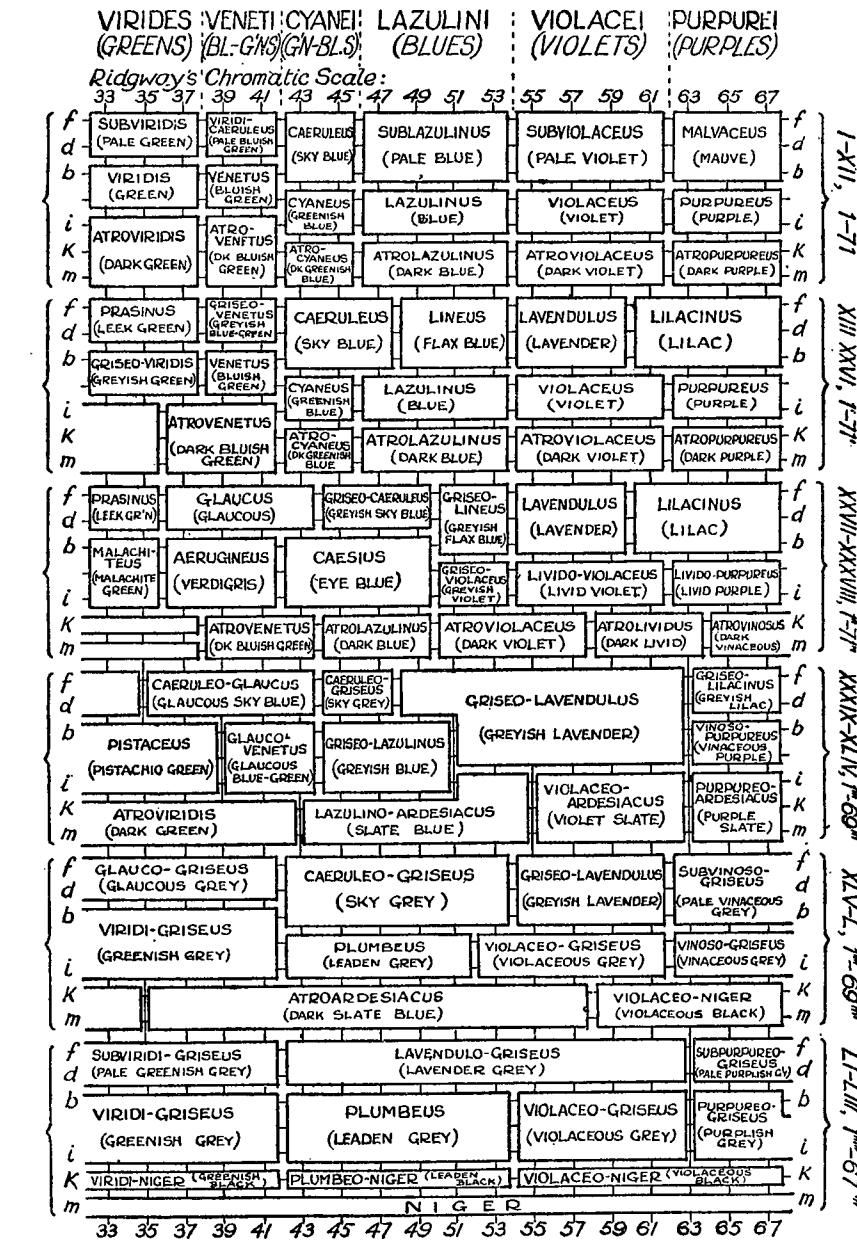


Fig. 15 Chart of Colours

(From H. A. Dade, *Colour Terminology in Biology*, 2nd ed.; 1949)

Kober (1932), König (1927), Platnauer (1921), Skard (1946), Vels Heijn (1958), Wallace (1927) and others. From these surveys it is evident that the classical use of colour terminology was 'too wide, too indefinite, too variable' to supply good precedent for modern scientific purposes. Hence authors since the eighteenth century have tended to restrict classical terms to a part of their original application, to introduce new terms covering other applications, to make more precise distinctions, and above all to associate terms with specimens of the colours themselves. A pioneer in this matter was J. A. Scopoli (1723–1788), who in his *Entomologia Carniolica*, xxxii–xxxiv (1763), gave Latin names which could be used to describe the colours of Lepidoptera. During the nineteenth century several botanists, notably A. P. de Candolle in 1813, G. W. Bischoff in 1830 and B. D. Jackson in 1899, produced annotated lists of colour names for botanical use. In 1832 John Lindley published a translation into English of Bischoff's list, which is reproduced below. The best general survey of English and Latin equivalents is Dade's *Colour Terminology in Biology* (2nd ed., 1949), which lists the many names now available, selects those best for use in Latin diagnoses, and defines them by reference to Ridgway's *Color Standards and Nomenclature* (1912), while keeping in mind the desirability of diverging as little as possible from P. A. Saccardo's *Chromotaxia* (1891; 3rd ed., 1912). Dade's chart showing the relations of the names thus selected and defined is reproduced on pp. 240, 241. Wilson's *Horticultural Colour Chart* (1938–41), cited in the vocabulary as *H.C.C.*, has provided a further set of such names. Many names coined in the *H.C.C.* consist of two words, e.g. *ruber monitorius* (signal red), *ruber orientalis* (orient red), etc. Paclt (1958) rejects this binary nomenclature in favour of having a single Latin term for each of the 93 colours recognized by him. His ten main groups are *ruber* (red), *aurantiacus* (orange), *flavus* (yellow), *chlorinus* (yellow-green), *viridis* (green), *cyaneus* (greenish blue), *violaceus* and *purpureus* (violet), *venetus* (bluish green), *lazulinus* (blue). Whenever possible, living material should be matched with the plates in these works or those of Oberthür & Dauthenay (1905), Maerz & Paul (1950), Paclt (1958), or Kornerup & Wanscher (1963) by at least two people—women in general have a more finely trained colour sense than men—and the use of colour names should be supplemented by precise references to such standards.

#### LIST OF LATIN COLOUR TERMS TAKEN FROM LINDLEY (1832) AND JACKSON (1899)

Entries numbered 1 to 103 below are taken from Lindley's *Introduction to Botany*, 402–408 (1832), and based on Bischoff's *Handbuch der*

*botanische Terminologie*, 1: 107–115 (1830). The paragraphs of discussion numbered I–XIII are quoted from Jackson's review of the Latin terms used in botany to denote colour (*J. Bot. (London)*, 37: 97–106: 1899). Together they summarize nineteenth-century usage.

I-II	(1-9) Colourless and White
III	(10-18) Grey
IV	(19-23) Black
V	(24-35) Brown
VI-VII	(36-55) Yellow and Orange
VIII	(56-62) Green
IX-X	(63-69) Blue, Violet and Purple
XI	(70-86) Red
XII	Vague terms
XIII	Variegations, Markings and Quality

#### I-II. COLOURLESS AND WHITE

White is usually expressed by *albus*. The following items 1–9 attempt to give more precision.

- 1 Snow-white (*niveus*); as the purest white; *Camellia japonica*.
- 2 Pure white (*candidus*; in Greek composition, *argo-*); very pure, but not so clear as the last; *Lilium candidum*.
- 3 Ivory-white (cream coloured; *eburneus*, *eborinus*); white verging to yellow, with a little lustre; *Convallaria majalis*.
- 4 Milk-white (*lacteus*; in words compounded of Greek, *galacto-*); dull white verging to blue.
- 5 Chalk-white (*cretaceus*, *calcarius*, *gypseus*); very dull white, with a little touch of grey.
- 6 Silvery (*argenteus*); a little changing to bluish grey, with something of a metallic lustre.
- 7 Whitish (*albidus*); any kind of white a little soiled.
- 8 Turning white (*albescens*); changing to a whitish cast from some other colour.
- 9 Whitened (*dealbatus*); slightly covered with white upon a darker ground.

I Amongst the terms expressive of absence of colour we find *hyalinus*, *vitreus*, *vitricus*, glassy; *aqueus*, clear as water; *crystallinus*, clear as ice; *pellucidus*, also implying clearness; *semi-pellucidus*, some amount of opacity; *diaphanus*, transparent; *achroos* and *incol* for scarious. Bischoff also adds *fenestratus*, but this use of the word is certainly very unusual.

II WHITE is not a colour, but it produces a feeling of absolute tint, not the negative considered in the foregoing section. Beginning with the most general and characteristic of the words expressive of white, we have *albus*, a dead white; *niveus*, and occasionally *nivalis*, a brilliantly pure white (as in

*Galeandra nivalis* Hort.); *virgineus*, unblemished white; *Papyraceus*, paper-white; *candidus* and *candidissimus*, shining white; then the four terms, *cretaceus*, *calcareus*, *creteus*, *gypseus*, seem synonymous, chalk-white; *cerus-satus*, plaster-white or white-lead-coloured, must mean the same; *argillaceus*, white clay (but also used for a yellower tint). *Albidus*, *albidulus*, *albinus*, *albineus*, *albellus*, *candidulus*, *exalbidus*, all mean whitish, with probably but little to choose between them; milk-white, that is, having a suffusion of blue, is represented by *lacteus*, *lacticolor*, *galactites*, *galacticolor*, *galachrous*. Silvery white is *argenteus*, *argentaceus*, *argentatus*, *argyraceus*. Something short of absolute purity is suggested by *albicans*, *albescens*, *candicans*, becoming white; ivory-white by *eburneus* and *eborinus*; a yellower tinge by *ermineus*, *cremeus*, *cremicolor*, cream-coloured; and an ill-defined 'marble-white' by *alabastrinus* and *marmoratus*, but the latter is used in another sense, and therefore ambiguous.

### III. GREY

- 10 Ash-grey (*cinereus*; in words compounded of Greek, *tephro-* and *spodo-*); a mixture of pure white and pure black, so as to form an intermediate tint.
- 11 Ash-greyish (*cineraceus*); the same, but whiter.
- 12 Pearl-grey (*griseus*); pure grey, a little verging to blue.
- 13 Slate-grey (*schistaceus*); grey, bordering on blue.
- 14 Lead-coloured (*plumbeus*); the same with a little metallic lustre.
- 15 Smoky (*fumeus*, *fumosus*); grey, changing to brown.
- 16 Mouse-coloured (*murinus*); grey, with a touch of red.
- 17 Hoary (*canus*, or *incanus*); a greyish whiteness, caused by hairs overlying a green surface.
- 18 Rather hoary (*canescens*); a variety of the last.

III The lightest tone of GREY is denoted by *canus* and *incanus*; *cinereus* is the grey of wood-ashes, with its allies, *cinerascens* (becoming grey), *cinericius*, *cineraceus*, *tephreus*, *tephrus*; *cretaceo-pallidus* seems to come here; *leucophaeus* must be near this. *Griseus* is darker, but *griseolus* and *grisellus* are perhaps intermediate; *lixivius*, darker than *griseus*, with a suspicion of brown. *Caeius* and *caesiellus* originally represent the blue-grey of the iris of the eye; *liveus*, *livius*, *lividus*, *lividulus*, duller, with less colour. *Spodochrous* is grey in general. *Molybdus*, *molybdinus*, *plumbeus* are lead-coloured; about the same intensity with more sheen are *columbianus* and *palumbinus*, which, meaning dove-coloured, seem misappropriated by a grey pigeon. Darker still are *ardesiacus* and *schistaceus*, slate-coloured; while *tylicolor* and *oniscus* are the tints of the wood-louse, and *elephines* and *elephinus* the deep colour of an elephant's hide. *Chalybeus* and *subustulatus* stand for steel-grey; *murinus* and *myochrous* are mouse-coloured (Fries distinguishes between these, the former the lighter); *atroschistaceus*, very dark grey; *fumosus*, *fumeus*, *fuligineus*, *fuliginosus*, *capnodes*, *capnoides*, *subfuscus*, *subaquilus*, represent smoky or sooty tints; *elbidus*, 'saddest grey'; *nigrescens* and *nigricans* are greys which turn black.

### IV. BLACK

- 19 Pure black (*ater*; in Greek composition, *mela-* or *melano-*), is black without the mixture of any other colour. *Atratus* and *nigritus*; when a portion only of something is black; as the point of the glumes of *Carex*.
- 20 Black (*niger*); a little tinged with grey. A variety is *nigrescens*.
- 21 Coal-black (*anthracinus*); a little verging upon blue.
- 22 Raven-black (*coracinus*, *pullus*); black, with a strong lustre.
- 23 Pitch-black (*piceus*); black, changing to brown. From this can scarcely be distinguished brown-black (*memnonius*).

IV Various qualities of BLACK have received distinct names; thus *ater* is pure black, without a trace of brown or blue in it; *atricolor* cannot be far off the same; *atramentarius*, inky; *niger*, glistening black, perhaps a trifle rusty; *nigerrimus*, intense black; *anthracinus*, coal-black; *piceus*, pitchy; *piceo-ater* and *furus* are swarthy and lustreless; *atratus* and *nigritus*, garbed in black; *pullus* and *pullulatus*, about the same tint; *memnonius*, nearly the same as *piceus*, perhaps a little browner; *aethiopicus*, negro-black; *coracinus*, *corvinus*, metallic lustrous black with a tinge of blue; *nigellus*, blackish, and *denigratus*, blackened, are wanting in precision.

### V. BROWN

- 24 Chestnut-brown (*badius*); dull brown, a little tinged with red.
- 25 Brown (*fucus*; in Greek composition, *phaeo-*); brown, tinged with greyish or blackish.
- 26 Deep brown (*brunneus*); a pure dull brown. Umber-brown (*umbrinus*) is nearly the same.
- 27 Bright brown (*spadiceus*); pure and very clear brown.
- 28 Rusty (*ferrugineus*); light brown, with a little mixture of red.
- 29 Cinnamon (*cinnamomeus*); bright brown, mixed with yellow and red.
- 30 Red-brown (*porphyreus*); brown, mixed with red.
- 31 Rufous (*rufus*, *rufescens*); rather redder than the last.
- 32 *Glandaceus*; like the last, but yellower.
- 33 Liver-coloured (*hepaticus*); dull brown, with a little yellow.
- 34 Sooty (*fuligineus*, or *fuliginosus*); dirty brown, verging upon black.
- 35 Lurid (*luridus*); dirty brown, a little clouded.

V BROWN, a warm tertiary, is treated separately, because of the numerous varieties tending either towards the yellows or reds. *Brunneus* or *bruneus* is a general term for brown, but when restricted, represented by Vandyke brown as a pigment. *Chocolatinus*, *theobrominus*, and *cacainus*, which represent the same thing; *coffeatus*, the colour of roast coffee-beans; *tabacinus*, *nicotianus*, offer a wide range, but are practically restricted to a deep brown. Less precise are *brunnescens* and *bruneolus*, lighter tints. *Umbrinus* would seem to imply the colour of the native earth, but, as we are informed that it is deep brown, it probably is that of burnt umber; *umbricellus* seems ancillary; *boeticus*, 'Spanish brown', must not be confused with the same adjective

when used locally; *castaneus*, chestnut-brown, brings us towards *badius*, bay; *russus*, nearly the same; *helvus* and *vaccinus*, 'cow-colour', said to be near bay; *hepaticus*, liver-coloured, redder; *hiberus*, 'red and black mixed, murrey'; deeper tones being *atro-brunneus*, blackish brown; *ustalis* and *ustulatus*, scorched or charred wood. Light browns, akin to yellow, are *spadiceus*, date-brown; *avellaneus*, *avellinus*, *corylinus*, tint of a new hazelnut, *glandulaceus*, a ripe acorn, come near the tawny shades named under orange, as also *ligno-brunneus*, *ligneus*, *lignicolor*, presumably the tint of recent wood before it becomes grey by exposure, hence yellowish brown.

Bischoff ranks *porphyreus* as amongst the browns; it seems erroneously.

## VI-VII. YELLOW AND ORANGE

- 36 Lemon-coloured (*citreus*, or *citrinus*); the purest yellow, without any brightness.
- 37 Golden yellow (*aureus*, *auratus*; in Greek composition, *chryso-*); pure yellow, but duller than the last, and bright.
- 38 Yellow (*luteus*; in Greek composition, *xantho-*); such yellow as gamboge.
- 39 Pale yellow (*flavus*, *luteolus*, *lutescens*, *flavidus*, *flavescens*); a pure but paler yellow than the preceding.
- 40 Sulphur-coloured (*sulphureus*); a pale lively yellow, with a mixture of white.
- 41 Straw-coloured (*stramineus*); dull yellow, mixed with white.
- 42 Leather-yellow (*alutaceus*); whitish yellow.
- 43 Ochre-coloured (*ochraceus*); yellow, imperceptibly changing to brown.
- 44 *Ochroleucus*; the same, but whiter.
- 45 Waxy yellow (*cerinus*); dull yellow, with a soft mixture of reddish brown.
- 46 Yolk of egg (*vitellinus*); dull yellow, just turning to red.
- 47 Apricot-coloured (*armeniacus*); yellow, with a perceptible mixture of red.
- 48 Orange-coloured (*aurantiacus*, *aurantius*); the same, but redder.
- 49 Saffron-coloured (*croceus*); the same, but deeper and with a dash of brown.
- 50 *Helvolus*; greyish yellow, with a little brown.
- 51 Isabella-yellow (*gilvus*); dull yellow, with a mixture of grey and red.
- 52 Testaceous (*testaceus*); brownish yellow, like that of unglazed earthenware.
- 53 Tawny (*fulvus*); dull yellow, with a mixture of grey and brown.
- 54 *Cervinus*; the same, darker.
- 55 Livid (*lividus*); clouded with greyish, brownish and bluish.

VI The type of YELLOW is *flavus*, without tending to orange or green or brown (sometimes indeed used for *ochraceus*); *flavissimus*, an intense shade, *flavicans*, *flavidus*, being tendencies towards *flavus*; *byssinus* is the yellow of raw silk; *citrinus*, *citreus*, *citrellus*, *citrinellus*, the pure yellow of the ripe lemon-rind; *luteus* is a full strong hue, used by Pliny to denote the yolk of egg, hence synonymous with *vitellinus*, having a tinge of orange in it. The

Greek forms are *xanthus* and its diminutive *xanthellus*; *aureus*, *auricolor*, *chryseus*, *chrysellus*, *chrysitis*, express not only the tint but the lustre of gold; *auratus*, gilt; *aureolus*, golden; *luteolus* and *subflavus*, lighter and less pure (but scarcely buff, as given by Ridgway); *electricus* and *succineus*, amber; *sulphureus*, *sulphurellus*, *sulphurinus*, sulphur-yellow, pure but light; *primulimus*, a shade greener than the last; *stramineus*, *straminellus*, *paleus*, straw-colour, like the last, but browner; *buceus*, colour of box-wood; *cerinus*, beeswax when in the comb; *melleus*, *mellinus*, honey-colour, the former ambiguous, being also used for smelling of honey; *ochraceus*, *ochroleucus*, *lutosus*, ochre-colour, that is, yellow broken with a tinge of red.

Connected with the foregoing are many mixed tints, tertiaries, such as *fulvus*, buff, with its variants *fulvidus*, *fulvellus*, *fulvescens*; *leochromus*, *leoninus*, *cervinus*, *cervineus*, *cervicolor*, *camelinus*, *mustellinus*, taking their names from the prevalent hue of the lion, stag, camel and weasel, varying buffs and drabs; *hinnuleus*, fawn-colour, tawny cinnamon. Stronger in tint, but impure, are *galbanus*, the colour of gum galbanum, greenish yellow, and *ictericus*, *icterinus*, the colour of a person suffering from jaundice. Wharton gives this as 'gall-stone', but in error; gall-stone is a gorgeous full-toned yellow, while the name implies a muddy hue; he also cites Fries as using *luridus* for wan yellow, dirtier than *melleus*, and almost 'stone-colour', that is, white broken with ochre, and sometimes umber. *Ravus* and its diminutive *ravidus* seem to be between yellow and grey.

VII ORANGE in its full glow is denoted by *aurantius*, and Fries uses *aurantiacus* as a lighter tint; *croceus*, *crocatus*, *crocinus*, rich orange; then we have a doubtful set of names, *igneus*, *ignescens*, *flammeus*, *flammeolus*, which have been applied to varied tints of orange, yellow and red; *aureoreus* perhaps should come here, but it is also vague. *Armeniacus*, dull orange, apricot-colour; *gilvus* by some ranked here, yellower than *cinnamomeus*; *crustulinus*, the colour of a cracknel biscuit; *isabellinus*, a dirtier tint; *rhabarbarinus*, rhubarb colour; *cupreus* and *cuprescens*, copper-coloured, sometimes with metallic lustre; *rubiginosus*, *ferrugineus* and *ferruginosus*, rusty; *nitelinus*, dormouse-colour, paler and less definite; *tofaceus* or *tophaceus*, the colour of tufa; *corneus*, 'horn-colour', whatever that may be; and *argillaceus*, improperly used for a fawn-coloured clay.

## VIII. GREEN

- 56 Grass-green (*smaragdinus*, *prasinus*); clear lively green, without any mixture.
- 57 Green (*viridis*; in Greek composition, *chloro-*); clear green, but less bright than the last. *Virens*, *virescens*, *viridulus*, *viridescens*, are shades of this.
- 58 Verdigris-green (*aeruginosus*); deep green, with a mixture of blue.
- 59 Sea-green (*glaucus*, *thalassicus*, *glaucescens*); dull green, passing into greyish blue.
- 60 Deep green (*atrovirens*); green, a little verging upon black.

61 Yellowish green (*flavovirens*) ; much stained with yellow.  
 62 Olive-green (*olivaceus* ; in Greek composition, *elaio-*) ; a mixture of green and brown.

VIII GREEN is termed *viridis* without more critical definition, its synonyms, more or less accurate, being *virens*, *viridans*, *virescens*, *viridescens*, *viridulus*. Grass-green is *herbeus*, *herbaceus*, *gramineus* (these are practically obsolete); *prasinus* is leek-green, practically the same tint as the last; *smaragdinus*, emerald-green; *berylinus*, resembling the last; *psittaceus*, parrot-green, deeper; *orobitinus*, defined as vetch-green, that is, with a dash of black in it; *atrovirens*, *atroviridis*, *melanochlorus*, *nigro-virens*, very deep green; and *flavo-virens*, a bright yellowish green. *Chlorascens*, *chlorinus*, *chloroticus* are greenish.

*Aeneus* is brassy; *aereus*, bronze; *aerugineus*, *aeruginosus*, verdigris-green; *salineus*, willow-green, that is, low-toned; *subviridis* may be the same. *Olivascens*, *olivaceus*, *oliveus*, *olivicolor*, *olivinus*, *elaeodes*, *pausiacus*, all express the tint of a ripe olive.

*Glaucus*, *glaucinus*, *glaucescens*, *thalassinus*, *thalassicus*, light sea-green, to which may be added *vitreus* of some authors; *aquamarinus*, a clear sea-green verging towards blue; and *venetus*, a deep sea-green.

#### IX-X. BLUE, VIOLET AND PURPLE

63 Prussian blue (*cyaneus* ; in Greek composition, *cyano-*) ; a clear bright blue.  
 64 Indigo (*indigoticus*) ; the deepest blue.  
 65 Blue (*caeruleus*) ; something lighter and duller than the last.  
 66 Sky-blue (*azureus*) ; a light, pure, lively blue.  
 67 Lavender-coloured (*caesius*) ; pale blue, with a slight mixture of grey.  
 68 Violet (*violaceus*, *ianthinus*) ; pure blue stained with red, so as to be intermediate between the two colours.  
 69 Lilac (*lilacinus*) ; pale dull violet, mixed a little with white.

IX BLUE has a comparatively small list to express its varieties; *caeruleus*, *caelstis*, *azureus*, *caelicolor* are sky-blue; *cobaltinus* somewhat paler, as is *caerulescens*; *cyanellus*, deeper, and tending towards *cyaneus*, cornflower-blue, *cizatinus* being given as about the same; *lazulinus* is ultramarine, a pigment of various shades, but always a clear bright blue; *turcoisinus* and *turcosus* stand for turquoise-blue, that is, with a hint of green in it; *caesius* and *caesiellus* are the blue-grey of the eye; *subcaeruleus* and *lividulus*, less clear, and not very definite; *scyricum* is given by Charleton as 'Gentianella blew'; *glastinus*, by the same writer as 'woad, watchet and light blew'; *indicus*, blue inclining to purple; *indigoticus*, indigo-blue, having a tinge of black in it; and dark blue, *cyanater*.

X PURPLE is very variously understood; practically it is any mixture of blue and red; Saccardo treats it as synonymous with crimson, but the

majority regard it as having more of blue in its composition. *Purpureus*, *porphyreus*, therefore, are general in their application, followed by *purpurascens*, *purpurellus*, *purpurinus* and *porphyreo-leucus*; *atropurpureus* is familiar to most in the old cultivated 'Sweet Scabious', *Scabiosa atropurpurea*. Royal purple, a warm deep rich tint, is represented by *ostrinus*, *tyrius*, *blatteus*. Charleton gives 'dibaphus, purple-in-grain' as different. The previously mentioned *vinaceus*, *vinosus* and *vinicolor* come near these hues. Of a lighter tint we find *molochinus* and *malvinus*, both expressing the bluish pink *Malva* flowers; *lilacinus*, *lilaceus*, *syringus* recall the tint of *Syringa vulgaris*. Colder in hue we have *violaceus*, *violascens*, *voleus*, *ianthinus*, *ionides* to recall the violet in all its shades, deeper tones denoted by *amethysteus*, *amethystinus*, *hyacinthinus* and *atro-violaceus*.

#### XI. RED

70 Carmine (*kermesinus*, *puniceus*) ; the purest red, without any admixture.  
 71 Red (*ruber* ; in Greek composition, *erythro-*) ; the common term for any pure red. *Rubescens*, *rubeus*, *rubellus*, *rubicundus*, belonging to this.  
 72 Rosy (*roseus* ; in Greek composition, *rhodo-*) ; pale pure red.  
 73 Flesh-coloured (*carneus*, *incarnatus*) ; paler than the last, with a slight mixture of red.  
 74 Purple (*purpureus*) ; dull red, with a slight dash of blue [see above].  
 75 Sanguine (*sanguineus*) ; dull red, passing into brownish black.  
 76 Phoeniceous (*phoeniceus*, *puniceus*) ; pure lively red, with a mixture of carmine and scarlet.  
 77 Scarlet (*coccineus*) ; pure carmine, slightly tinged with yellow.  
 78 Flame-coloured (*flammeus*, *igneus*) ; very lively scarlet, fiery red.  
 79 Bright red (*rutilans*, *rutilus*) ; reddish, with a metallic lustre.  
 80 Cinnabar (*cinnabarinus*) ; scarlet, with a slight mixture of orange.  
 81 Vermilion (*miniatus*, *vermiculatus*) ; scarlet, with a decided mixture of yellow.  
 82 Brick-colour (*lateritius*) ; the same, but dull and mixed with grey.  
 83 Brown-red (*rubiginosus*, *haematiticus*) ; dull red, with a slight mixture of brown.  
 84 Xerampelinus ; dull red, with a strong mixture of brown.  
 85 Coppery (*cupreus*) ; brownish red, with a metallic lustre.  
 86 Githagineus ; greenish red.

XI *Ruber* embraces the various forms of RED as a whole: the purest being *carmineus*, cochineal; *coccineus*, perhaps identical; while *kermesinus* and *chermesinus* are the same, and *coccinellus* a lighter tint. *Phoeniceus* is scarlet a little dull, *cinnabarinus* and *scarlatinus* being the fullest in hue; *miniatus*, *miniaceus*, the more orange tint of red-lead. Verging towards crimson, that is, with blue instead of yellow as the tingeing colour, we have *sanguineus*, *sanguinolentus*, *cruentus*, *cruentatus*, *haematinus*, *haematites*, *haematitius*, *haematochroos* and *haematicus*, all denoting blood-colour;

*puniceus* is crimson; *burrhus*, deep crimson, passing into *xerampelinus*, *atrocarmesinus*, *atro-coccineus*, towards *rutilus*, *rutilans*, defined by some as purplish brick-red, but usually brighter in hue; *testaceus*, brick-red, which approaches *gylvus*, *figlinus*, *terra cotta*; *lateritius*, also brick-red; still deeper in tone, *vinaceus*, and *vinosus*, wine-colour. Rosy reds are *carneus*, *carneolus*, *incarnatus*, flesh-colour; *hysginus*, distinctly redder; *caryophyllaceus*, 'pink'-colour; *erubescens*, blush; *roseus*, *rosaceus*, *rosellus*, *rhodellus*, rose; *corallinus*, coral-red; *salmonaceus*, *salmonicolor*, *salmoneus*, pink with a dash of yellow; *persicus*, *persicinus*, peach-flower colour.

Terms used laxly are *rubescens*, *rufescens*, *rufidulus*, *rufulus*, *rubicundus*, *rufus* or *ruffus*, *sandaricus*, *sandarichinus*, *robeus*, *robus*, *rubens*, *rubellus*, *rubeolus*, *rubidus*, *subrubicundus*, *subrubens*, *sublateritius*, *helvolus*, the last also used for a yellowish drab, but probably pale red, according to the mycological usage of the term; *russus* is also placed amongst the ill-defined reds by some.

*Githaginosus* (Hayne, Bischoff) and *githagineus* (Lindley) are defined as greenish red, a contradiction; the name is derived from *Githago*, and it refers to red or purple ribs on a green calyx, such as occurs in some species of *Silene*.

## XII. VAGUE TERMS

XII Amongst the vague terms must be cited *igneus*, *ignescens*, *flammeus*, *flammeolus*, as they have been used to express different colours; *pallidus* has also been made use of for almost every pale tint of the artist's palette; *luridus* is nearly as indefinite; *tristis* and *sordidus*, any dull uninviting hue, *obscurus* being perhaps a truer term; *coruscans* must mean any strikingly brilliant colour or combination; *metallicus*, any glistening tint suggestive of a metal.

*Fulmineus*, 'lightning-coloured', according to Wharton, is 'fulvus, fere brunneus' of Fries; it is employed in *Cortinarius fulmineus* Fr.

Other terms which are too vague to be precisely localized are *nebulosus* (Bischoff = *fumosus*); *ferreus*, 'iron-gray' (Charleton).

There yet remain more than a score of terms proposed to express colour, which have not been adopted by others; as they seem to be on record only in the original place of publication (Hayne, *De Coloribus*, 1814), I prefer to give them separately in the order chosen by the author, omitting the zoological and mineralogical terms: *betulinus*, the brownish white of birch-bark; *amiantus*, greenish-white; *cycaceus*, 'sago-grey'; *roborinus*, the grey of last year's oak-twigs; *strychninus*, the colour of the seeds of *Strychnos Nux-vomica*; *foeninus*, 'hay grey'; *morinus*, mulberry-black; *ureaceus*, charred black; *cascarillus*, the colour of the inner bark of Cascarilla; *guajacinus*, greenish brown; *juniperinus*, bluish brown; *ranunculaceus*, buttercup yellow; *laureolaceus*, the tint of the flowers of *Daphne Laureola*; *pomaceus*, apple green; *pisaceus*, the green of unripe peas; *populeus*, the blackish green of poplar leaves; *capparinus*, brownish green; *endiviaceus*, light blue; *nubilus*, greyish blue; *myrtillinus*, bilberry blue; *pruninus*, plum blue; *parellinus*, litmus violet; *infumatus* is the same as *fumigatus*.

## XIII. VARIEGATIONS, MARKINGS AND QUALITY

- 87 Variegated (*variegatus*); the colour disposed in various irregular, sinuous spaces.
- 88 Blotched (*maculatus*); the colour disposed in broad, irregular blotches.
- 89 Spotted (*guttatus*); the colour disposed in small spots.
- 90 Dotted (*punctatus*); the colour disposed in very small round spots.
- 91 Clouded (*nebulosus*); when colours are unequally blended together.
- 92 Marbled (*marmoratus*); when a surface is traversed by irregular veins of colour; as a block of marble often is.
- 93 Tesselated (*tessellatus*); when the colour is arranged in small squares, so as to have some resemblance to a tessellated pavement.
- 94 Bordered (*limbatus*); when one colour is surrounded by an edging of another.
- 95 Edged (*marginatus*); when one colour is surrounded by a very narrow rim of another.
- 96 Discoidal (*discoidalis*); when there is a single large spot of colour in the centre of some other.
- 97 Banded (*fasciatus*); when there are transverse stripes of one colour crossing another.
- 98 Striped (*vittatus*); when there are longitudinal stripes of one colour crossing another.
- 99 Ocellated (*ocellatus*); when a broad spot of some colour has another spot of a different colour within it.
- 100 Painted (*pictus*); when colours are disposed in streaks of unequal intensity.
- 101 Zoned (*zonatus*); the same as ocellated, but the concentric bands more numerous.
- 102 Blurred (*lituratus*). This, according to De Candolle, is occasionally, but rarely, used to indicate spots or rays which seem formed by the abrasion of the surface; but I know of no instance of such a character.
- 103 Lettered (*grammicus*); when the spots upon a surface assume the form and appearance of letters; as some Opegraphas.

XIII This subsection consists of terms implying colour, but not mentioning the particular kind, such as *coloratus*, *concolor*, *bicolor*, *mutabilis*, *variegatus*, *pictus*, *guttatus*, *punctulatus* and the like. *Marmoratus* belongs here, although it has been used as synonymous with *alabastrinus*, etc.

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There are also a few useful qualifying adjectives, adverbs and prefixes which can be used together with the colour terms given above:

atro- (prefix): blackish or very dark

dilute (adv.): faintly; *dilutus* (adj.): diluted, faint

floridus (adj.): bright

fuscus (adj.): dark

impolitus (adj.): unpolished, matt

infuscatus (adj.): darkened

intense (adv.): intensely

laete (adv.): brightly; *laetus* (adj.): bright

nitidus (adj.): glossy

obscure (adj.): darkly, dully; *obscurus* (adj.): dark, dull

opacus (adj.): opaque

pallide (adv.): palely; *pallidus* (adj.): pale

pallidulus (adj.): somewhat pale; *perfallidus* (adj.): very pale

purus (adj.): pure

remissus (adj.): faint

saturatus (adj.): full, deep

sordide (adv.): dirtily; *sordidus* (adj.): dull, dirty

suffusus (adj.): tinged

vivide (adv.): brightly; *vividus* (adj.): bright, vivid.

Tingeing, i.e. the addition of a small amount of one colour to another so as to modify slightly the general effect of the latter, is often expressed by means of the preposition *ex* or *e*, indicative of change of state, with the adjective of the modifying colour in the ablative, e.g. *pileus ex olivaceo brunneus* (pileus brown tinged with olive-green), *corolla e roseo alba* (corolla rose-tinged white), *baccae e viridi rubentes* (berries greenish red), *folia ex purpureo vino viridia* (leaves green tinged with vinous purple). Similarly, *exalbidus* means 'whitish'.

#### ELIAS FRIES'S NOMENCLATURE OF COLOURS FOR FUNGI

The *Systema mycologicum* (1821-29), *Elenchus Fungorum* (1828) and other publications by Elias Fries (see p. 7) provide the main taxonomic and nomenclatural foundation of mycology. Fries based them largely on observations he had made from living fungi. In 1884 Henry Thornton Wharton (1846-95) published a study of his use of colour terms. Wharton, a medical man by profession, was a keen amateur mycologist and classical scholar—his publications include a translation of Sappho—and his commentary retains its value. A condensed version is given below:

The subject of colour-names is so vast and intricate that in the following paper I have confined myself to the consideration of those only which occur in Fries' description of the *Agaricini* in his 'Hymenomycetes Europaei'. Even in this restricted field I have found nearly 200 names of colours,

although, with one or two exceptions, I have avoided reference to compound names. . . . Perhaps I have omitted some few as it is, for I have had to go over some 20,000 lines of concisely-written Latin to find those that I have gathered together for examination here.

In so long a list of names it is fortunate that not every one requires separate consideration. I have enumerated not only the colour-names used for descriptive purposes by Fries himself, but also most of those used as specific. And in making specific names there is a natural tendency to use a colour-name absolutely synonymous with another, simply from the fact of the most obvious one having been already used. For instance, a describer wishes to name a white species *Agaricus albus*; but when he finds that name is preoccupied, he names his species *Ag. candidus*. Still we need not conclude that he had the strict classical Latin differences of the two words in his mind's eye; he probably never thought that *Ag. albus* was so named because it was of a dead white, nor in speaking of *Ag. candidus* need he have meant to imply that it was of a glistening white, as Cicero might have done. . . .

Another difficulty that constantly presents itself is the indefiniteness with which colour-names were used in classical times. In trying to make out what Fries intended to describe, we are continually hampered by a divergence from the ancient use of the very words he uses. . . . It is my endeavour here to make out the idea in Fries' mind, and only to that end to use the light that can be thrown on the subject from classical sources. Perhaps the best instance of the vague way in which the ancient Romans used the names of colours is to be found in a line by Albinovānus, a Latin poet contemporary with, and a friend of, Ovid's, who flourished about A.D. 28; he describes a woman's arms as whiter than the 'purple' snow:

*Brachia purpureā candidiora nive.*

Of course, 'purple' here only means 'glistening' or 'dazzling', but such a use of words does not accord with modern ideas. . . .

In each branch of art or knowledge at the present day different names are used for the same colours. . . . An amusing instance was given me lately by an omnibus-driver. One of his passengers had been much struck by a pair of horses he had been driving, a dun and a strawberry-roan, in the horsey-man's language; the passenger, a tailor, described the one as 'drab', and the other as a 'claret-mixture'.

Consequently mycologists must be a law unto themselves, and if we are willing to hold the illustrious Fries as our law-giver, we must study, not so much what colour-names *should* mean, as in what sense he used them. . . .

We need not be much troubled about classification, for a very simple method is sufficient for our purposes. But it is as well to know how chromatographers ordinarily classify colours; and to this end I copy the following from one of the many editions of Field's book:

Neutral	colours:	white, black
Primary	„	: yellow, red, blue
Secondary	„	: orange, green, purple
Tertiary	„	: citrine, russet, olive
Semi-neutral	„	: brown, maroon, grey

I propose to group the whites and blacks with the greys that come between them; to range the oranges, citrines and browns after the yellows; to include the russets and maroons as subordinate to the reds; to take the purples as variations of the blues; and to comprehend the olives under the greens. Sombre colours dominate so conspicuously among Fungi that we understand their coloration best by regarding their lowly hues as variants from types that owe their names to their very brilliancy. Their complications are so great that it is often difficult, even as it is, to refer them to their proper types; a trouble that was ever present to me when I preliminarily essayed to classify them.

I would begin with the whites and the blacks, and their intermediate greys; I at once discard the trammels that the chromatographers lay down for our deception, when they say that these, in their extremes, are no colours at all.

And first, of the WHITES. My list shows nineteen distinct terms for these. But most of them are made up on the principle that I have already laid down as of constant occurrence, viz., that they owe their appearance to the natural and obvious terms having been already used. The classical distinction of *albus* meaning a dead white, and *candidus* a shining white, has little prominence in Fries' description. To Fries, *albus* is white, and perfect whiteness admits of no qualification. If *albus*, as a specific name, is preoccupied, *albellus*, *albescens*, *albidior*, *albidus* and *albineus* can only express the idea of whiteness, but seem used rather for 'whitish'. *Albicans* and *candidans* should strictly mean 'becoming white'. *Argenteus* and *argyraceus* are a silvery white, silvered. *Dealbatus*, white-washed or plastered, *cerussatus*, coloured with white-lead, and *argillaceus*, like white clay, seem to connote texture or surface along with whiteness. *Eburneus*, ivory-white, *ermineus*, ermine-white, *niveus*, snow-white and *virgineus*, virgin or pure white, have no more distinction than the English terms by which they are naturally translated.

Between the extremes of white and black there can be great varieties of GREYS, and the pure greys run into the blues and browns, so that they are best studied in three groups. Of the pure greys, *canus* and *incanus* are the nearest to white; just as we call white hair or a white horse 'grey'. *Cinereus* is the grey of wood-ashes, *cinerascens* is becoming such a grey; *griseus* seems to be a little darker, and *lixivius* is darker still and inclining to brown. *Cretaceo-pallidus* is a pale chalky grey. *Nigrescens* and *nigricans* do not mean so much dark grey as a grey that turns black with age.

Of greys that incline to blue, *caesius* is the palest; it was the classical term for the blue-grey of the eye. *Glaucus* is a grey that inclines to green, and *glaucescens* denotes a paler shade of the same colour. *Livens* and *lividus* are bluish or leaden-grey, much like *molybdus* and *plumbeus*. *Ardosiacus* is a dull lead-colour. *Ag. (Collybia) tylicolor* and *Ag. (Omphalia) oniscus* seem to owe their specific names to their likeness in colour to a kind of cod-fish known as *oniscus*, and so mean rather a light grey, and not the dark slate-grey of the woodlouse we describe under the name of *Oniscus*. *Chalybaeus* is a steel or iron-grey; Fries, under *Cortinarius sciophyllus*, explains it as *caeruleo-fuscus*, dusky blue.

Of the brown-greys, *murinus*, mouse-colour, is the palest (cf. *Paxillus extenuatus*, Fries, p. 402). *Myochrous* should have the same signification, but is used by Fries for a dusky umber. *Argillaceus* is a light brownish ash-colour. *Fuscus*, dusky, is rather a vague term, but it is almost too brown to be classed under the greys at all; *fuscescens* means becoming dusky. *Ravidus* is a dark grey. *Fumosus*, *fuligineus* and *fuliginosus* are best translated smoky, and not, as the latter might be, sooty black.

Pure BLACKS fortunately do not admit of much variation, although since an absolute black is rarely seen, several terms occur. *Ater* is strictly a lustreless black, and *niger* is a glistening black; *piceo-ater*, black as pitch, and *furyus*, swarthy, come into the former category; *coracinus*, raven-black, with a tinge of blue, into the latter. *Atratus* and *pullatus* mean simply 'clothed in black'. *Denigratus*, 'blackened', is used for a dark dusky brown, and not black at all. *Nigerrimus*, 'black as black can be', seems rather pleonastic, but Fries uses it in his descriptions (*Ag. Panaeolus hypomelas*, p. 313).

The next group, the YELLOWS, under which I range the oranges, citrines and browns, presents the greatest difficulties of all, and it is hard to get them into satisfactory order.

The type of pale yellow seems to be *luteus*, like the flowers of the plant woad (*Isatis tinctoria*). Paler than this are *luteolus* and *sulphureus*, sulphur-yellow. *Stramineus*, straw-coloured, denotes a paler and less pure yellow, Naples yellow, of which a deeper, duller shade is *cérinus*, *croceus*, saffron-yellow, being a fuller shade. *Citrinus* is our lemon-yellow, yellow of wax.

The type of full yellow is *flavus*, gamboge-yellow, which at its fullest brilliancy is *flavissimus*. *Flavidus* is a paler yellow, purer and richer than *luteus*. *Vitellinus*, like the yolk of an egg, is used by Fries, as the Canon reminded us last year, to describe the Chantarelle (*Cantharellus cibarius*). Not far off *flavus* is *aureus*, gold-coloured, which seems to me most like the Cadmium yellow of artists; its diminutive, *aureolus*, does not seem to be a very different shade. *Galbānus*, the colour of the gum galbanum, is a greenish yellow.

The orange-yellows, made up of yellow and red, not brown, are typically two; *aurantius* being a full orange, Cadmium orange, and *aurantiacus* a paler orange, containing less red. *Igneus* and *flammeolus*, denoting the colour of flame, and *fulmineus*, that of lightning, come in this place, but seem to have no very certain application.

*Persicinus* and *persicolor*, are difficult to describe more intelligibly than by peach colour. *Armeniacus*, apricot-coloured, is explained by Fries as tawny-cinnamon (*fulvo-cinnamomeus*) or yellowish-tan (*helvolo-alutaceus*).

The BROWNS are as extensive as the greys, and comprise every tint between impure yellow and the deepest burnt-umber. Their distinctions are best understood by grouping them into yellow-browns, red-browns and true browns.

Of the yellow-browns *cinnamomeus*, cinnamon, a light yellowish brown, is the palest and most familiar. *Gilvus* is a yellower shade; *Ag. (Clitocybe) splendens* may be taken in illustrating the type of the colour, a yellowish tan, as it was formerly known as *Ag. gilvus*; classically, *gilvus* was an epithet of a

dun or cream-coloured horse. *Alutaceus* has rather a wide signification, but it seems best translated by buff or tan. When it is lighter and yellower it is *helvolus*, the epithet of 'white' wine and 'white' grapes in Pliny: in describing *Cortinarius iliopodius*, Fries explains *helvolus* by *alutaceus*, but there must have been some distinction in his mind between the two terms, for he uses the compound, *helvolo-alutaceus* as 'dusky cinnamon', a fact which appears to show that even Fries himself was not so clear in the application of colour-names as we should like to be. *Crustulinus* seems to be the colour of toast, much darker and warmer than that of a cracknel-biscuit. *Ochraceus* is yellow-ochre, and *melleus*, honey-yellow, is dingier and less yellow; *luridus*, sallow or wan, is still paler and less yellow, almost like that which builders call 'stone-colour'. *Rhabarbarinus* is the light 'brownish yellow of Turkey rhubarb. *Isabellinus* is a light brownish-yellow or dirty cream-colour.

Fawn-colour does not fall very conspicuously into any of my three divisions of browns, but most of us know the hue so denoted; *cervicolor*, *cervinus* and *hinnuleus* all seem to mean much the same. *Cervinus* is applied to the darkest shade, and Fries explains *hinnuleus* as a tawny-cinnamon (p. 380).

The brownish ochre yellow colour known to artists as 'gall-stone', only with an inclination to a dirty green, is denoted by *ictericus* or *icterinus*.

The brightest of the red-browns is *lateritus*, the colour of old red tiles; its paler shade, that of *Ag. (Hypholoma) sublateritus*, is familiar to us all. *Testaceus*, brick-coloured, is a reddish brown or rusty bay, almost Venetian red. *Fulvus* is tawny, the colour of a lion, and is also known as *leoninus* or *leochromus*; *fulvellus* seems to be paler and redder, and very like that which gives its name to *Ag. (Collybia) nitellinus*, dormouse-colour. *Helvus* is a light bay or 'cow-colour', like *vaccinus*. *Badius* is a reddish-brown, the colour of a 'bay' horse; *spadiceus*, date-brown, is a duller and darker shade. *Hepaticus*, liver-coloured, is a darker and redder brown than bay. *Ustalis* denotes a warm reddish bay, between red-ochre and brown-madder.

Of the true browns, the type is *brunneus*, Vandyke-brown. *Coffeatus*, like roasted coffee, is very similar. *Ligneo-brunneus* is a lighter or wood-brown. The apparently extinct *Ag. (Lepiota) Paulletii* is described by Fries as *colore de noisette*, which must mean a light nut-brown or hazel. *Umbrinus* is a dark brown, brown umber, the colour of a 'brown' horse; indeed, the scale of colours used in describing horses, from dun through chestnut, bay, and brown to black, shows how, in ordinary language, the name of a colour is always taken as of a very extensive connotation, because it is hard to decide where one colour ends and another begins.

We now come to the REDS and their varieties. The palest is *carneus*, with *carneolus* and *incarnatus*, flesh-coloured. *Hysginus* is a more distinctly red flesh-colour. *Roseus* and *rosaceus* imply a rosy pink; *rosellus* seems to mean inclined to pink. There must be some difference between the shades of scarlet or vermillion distinguished as *cinnabarinus* and *miniatus*, because each is compounded with the other as *cinnabarino-miniatus*, but I have not succeeded in finding out what the difference is. *Coccineus*, cochineal red, is a deeper scarlet, carmine. *Sanguineus*, blood-red, is nearly similar. *Rufus*,

*ruber* and *russus* are less pure reds. *Rubescens* is merely becoming red. *Rubellus*, *rufidulus* and *rufulus* are reddish. *Rubens* is a brick-red; *rutilus*, *rutilans* a purplish brick-red. *Vinaceus* is reddish rather than claret-coloured, but it does not seem to be ever used in descriptions. Less pure reds are *castaneus*, chestnut; *ferrugineus* and *rubiginosus*, rust-red; and *puniceus*, which is an almost purple red.

BLUES are so rare among Fungi that very few names are required for them. *Caeruleus* is a pale blue, azure; *caerulescens* is becoming blue. *Azureus*, *lazulinus* and *cyaneus* are rather ultramarine. *Cyanellus* is almost sky-blue. *Purpureus* is a bluish purple; *violaceus*, violet, is a reddish purple; *lilacinus* is lilac or mauve. *Ianthinus* and *ionides* alike refer to a violet colour. *Porphyro-leucus* should mean purplish-white, but *Ag. (Tricholoma) porphyro-leucus*, Bulliard, is described by Fries as 'sooty or dusky, becoming red'.

The type of the GREENS is *viridis*, but it is of no definite hue; *virescens* and *viridans* mean turning green. *Aerugineus* and *aeruginosus* refer to a verdigris or rather bluish-green. *Olivaceus* is olive-green, *olivascens* denoting the preliminary stage of becoming green. *Pausiācus* describes precisely the same green, from *pausēa* or *pausia*, a variety of olive; for Fries says of *Ag. (Clitocybe) pausiacus* that the gills are olivaceous.

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## CHAPTER XIX

## Greek Words in Botanical Latin

Indebtedness of botanical Latin to Greek, p. 260—Transliteration of the Greek alphabet, p. 261—The Greek alphabet, p. 261—Word endings, p. 263—Gender of Greek nouns and adjectives, p. 264—Formation of compounds, p. 266—Consonant changes, p. 270—Greek word elements, p. 272—References, p. 281.

## INDEBTEDNESS OF BOTANICAL LATIN TO GREEK

Although Latin is the official language for the scientific names of plants, many such names are really of Greek origin. The cause is two-fold. As E. L. Greene noted: 'Pliny, the supreme Latin writer about plants, in translating Theophrastan texts by the hundred into Latin for Roman readers, made use of familiar Latin names in place of the Greek names when there were such, e.g. in place of the Greek *itea* [ἰτεα]<sup>1</sup> he wrote *salix*; in place of *drys* [δρύς], *quercus*; Latin *ulmus*, *sambucus* and *ranunculus* in place of Theophrastan *ptelea* [πτελεα], *acte* [ἀκτη] and *batrachium* [βατραχιον]'. For many plants, however, there were no Latin names available. Pliny overcame this difficulty by transliterating the Greek name into Roman characters, the termination being sometimes changed by him or the not always competent clerks and scribes working hurriedly on his vast compilation, in order to conform to Latin usage. *Aconitum* (ἀκονίτον), *acorus* (ἀκόρος), *alsine* (ἀλσινη), *alyssum* (ἀλυσσον), *anchusa* (ἀγχονσα), *anemone* (ἀνεμωνη), *antirrhinum* (ἀντριρρινον) and *aristolochia* (ἀριστολοχια) are but a few of such names taken into Latin from Greek. Linnaeus listed many others in his *Critica botanica*, no. 241 (1737) and *Philosophia botanica*, no. 241 (1751), and himself drew upon ancient names to designate new genera.

There are, however, many botanical names which, although compounded of Greek words, formed no part of ancient Greek. Such names are continually being introduced. This is partly because the apt Latin word has been used already, but chiefly because Greek is a rich flexible language in which pleasing compounds are readily made.

<sup>1</sup> In this chapter, as elsewhere in this book, Greek words are given without accents, these being irrelevant to its purpose. As stated by F. K. Smith & T. W. Melhuish (*Teach Yourself Greek*; 1947): 'The writing of accents on Greek is a conservative tradition from which we might with advantage break away. The ancient Greeks themselves never wrote them. . . . Accents do not appear in manuscripts before the seventh century A.D. The Greek language, however, is quite intelligible without accents. Sappho and Plato did not need them. We may well be rid of an unnecessary burden.'

A pioneer in this modern use of Greek was Pierre Richer de Belleval (c. 1558–1632), founder of the Montpellier botanic garden, who used Latin generic names in Roman characters followed by Greek specific epithets in Greek characters. Thus he proposed the name *Gentianella ἑαρανθοκαναοχλωρος* for the plant later named *Gentiana verna*, *Fritillaria πλατυφυλλανθομηλυνος* for *Fritillaria delphinensis* *moggridgei*, and so on. Such names he placed on the plates etched and engraved under his direction from 1598 onwards; although known to Linnaeus (cf. *Phil. bot.*, no. 295; 1751), neither they nor any exposition of this system were formally published before 1787. By then the Linnaean system of nomenclature, with Greek words transliterated, had become firmly established.

## TRANSLITERATION OF THE GREEK ALPHABET

Under the *International Code of botanical Nomenclature*, principle V (1961), scientific names taken from any language other than Latin or formed in an arbitrary manner are treated as if they were Latin, regardless of their derivation. Latin terminations should be used so far as possible for new names. Greek words must be transliterated into Roman characters when used to form botanical names and epithets, as Linnaeus pointed out in his *Critica botanica*, no. 247 (1737): 'Greek generic names are to be written in Latin characters', since 'in every age it has been the recognized practice among almost all botanists, and even among the most eloquent Romans in ancient times, by Pliny and others, to write Greek names in Roman letters'.

## THE GREEK ALPHABET

Numerical Value	Large Character	Small Character	Name	Latin Equivalent	Latinized Transliteration	Examples
1.	'Α 'Α	α ά αι	alpha	a ha ai	a ha usually ae less often ai hae	'Ακακια, <i>Acacia</i> ἀπαλος, <i>hapalus</i> Παιονια, <i>Paeonia</i>
		αι				'Αιρα, <i>Aira</i>
2.	Β	αυ	bēta	au	au	Δαυκος, <i>Daucus</i>
3.	Γ	β γ γκ γξ	gamma	b g gg gk nc	b g ng gk nx	Βριζα, <i>Briza</i> γιγας, <i>gigas</i> γιγιδιον, <i>Gingidium</i> 'Αγκιστρον, <i>Ancistrum</i> Σογχος, <i>Sonchus</i>
4.	Δ	δ	delta	d	d	Δωδεκαθεον, <i>Dodecatheon</i>

Numerical Value	Large Character	Small Character	Name	Latin Equivalent	Latinized Transliteration	Examples
5.	'E 'E	ε ε ει ευ	ěpsilon	ě ei eu	e he i or e eu rarely ev heu	'Εβενος, <i>Ebenus</i> 'Ελενιον, <i>Helenium</i> 'Ερεικη, <i>Erica</i> . Ποταμαγετον, <i>Potamogeton</i> Τευκριον, <i>Teucrium</i>
6.	<i>F or F</i>	εύ	digamma	a v	v	Zεα, <i>Zea</i>
7.	Z	ζ	zēta	z	z	'Ηπειρωτης, <i>Epirotes</i>
8.	'H (final)	η	ēta	ē	e	Αλοη, <i>Aloe</i> , Τυφη, <i>Typha</i>
9.	'H	η	thēta	ē e or a	he he	'Ηρακλειον, <i>Heracleum</i> Θησειον, <i>Thesum</i>
10.	Θ	θ	iota	th	th	'Ιρις, <i>Iris</i>
	'I	i		i	i or j	'Ιππουρις, <i>Hippuris</i>
20.	K	κ	kappa	hi k	hi c rarely	Κακαλια, <i>Cacalia</i> Μελιλωτος, <i>Melilotus</i>
30.	Λ	λ	lambda	l	l	Λεμνα, <i>Lemna</i>
40.	M	μ	mu	m	m	Νηριον, <i>Nerium</i>
50.	N	ν	nu	n	n	Ξανοιον, <i>Xanthium</i>
60.	Ξ	ξ	xi	x	x	'Ορχις, <i>Orchis</i>
70.	'O 'O (final)	ο ο	omicron	o on os	o ho on um us or os	'Ολοστεον, <i>Holosteuon</i> Μηνον, <i>Meum</i> 'Ακανθος, <i>Acanthus</i> 'Ακινος, <i>Acinos</i> Φοινιξ, <i>Phoenix</i> 'Αγχονσα, <i>Anchusa</i>
80.	Π	π	pi	oi ou	oe u	Πεπλις, <i>Peplis</i> Δρυπτις, <i>Drypis</i>
100.	'P 'P	ρ ρ	rho	P r	P r	'Ρηον, <i>Rheum</i> Γλυκυρριζα, <i>Glycyrrhiza</i>
200.	Σ	σ, s	sigma	rr s	rrh s	Σεσελι, <i>Seseli</i> . στυλος, <i>stylus</i>
300.	T	τ	tau	t	t	Τετραλιξ, <i>Tetralix</i>
400.	'Y	v	upsilon	u	y	θυμος, <i>Thymus</i>
500.	Φ	φ	phi	hy ph	hy ph	'Υσσωπος, <i>Hyssopus</i> Φιλαδελφος, <i>Philadelphia</i>
600.	X	χ	chi	ch	ch	Χελωνη, <i>Chelone</i>
700.	Ψ	ψ	psi	ps	ps	Ψυλλιον, <i>Psyllium</i>
800.	Ω	ω	omega	o	o	Ωτιτης, <i>Oties</i> , Βρωμος, <i>Bromus</i> ωρολογιον, <i>horologium</i>

The divisions of Greek texts, e.g. Sprengel's edition (1829–30) of Dioscorides, *Materia medica*, are often numbered with Greek letters having the numerical values given above.

The smooth breathing sign ' (spiritus lenis) associated with an initial letter merely indicates the absence of an aitch (H, h): thus ἀ, ἐ, ἡ, ἤ, ἰ, ὁ, ὕ and ὠ are transliterated as a, ē, ē, i, ὁ, r, y and ὁ respectively.

It should be noted that there is no initial letter corresponding to our H ([h]aitch) in the above Greek alphabet. This sound is one easily lost and also easily but irregularly inserted in many languages. The fate of the letter H (which originally represented an aitch sound) was different in Greek Italy and Greek Asia Minor (Ionia). In Italy the Greeks distinguished between words beginning with an aitch and those not. In Ionia the Greeks dropped their aitches; thus, having no use for this letter in its original sense, they adopted it for the long 'ee' sound. The Ionian alphabet ultimately became the standard Greek alphabet, and to make a distinction between words beginning with an aitch and those not, the Alexandrians split the letter H in two, putting Ι before words beginning with an aitch; this ultimately became ' and is called the rough breathing (spiritus asper); hence ἀ, ἐ, ἡ, ἤ, ἰ, ὁ, ὕ and ὠ are transliterated as ha, hē, hē, hi, hō, rh and hō respectively. Robert Brown overlooked this when he proposed the generic name *Eleocharis*, from ἐλος, ἐλεος 'marshy ground', χαρις 'grace'; he should have written it *Heleocharis*. As regards the transliteration of β, the Romans themselves varied in their practice; thus ραφανος (radish), probably an early borrowing, became *raphanus*, but ραμνος (buckthorn) *rhamnus*. Hence the original spelling of an author should be accepted.

## WORD ENDINGS

The Greek ending -os (ος) usually becomes -us when transliterated. Thus ὁροβος became *orobus* in Latin, φιλαδελφος *philadelphus*, etc. The Greek ending -pos (-ros), however, often became -er, e.g. *Alexander* from Ἀλεξανδρος (cf. Mayer, 1957). The neuter ending -ov (-ōn) often becomes -um but sometimes, and then usually in generic names, remains -on. Thus ἀνδροσαιμον became *androsaemum* and ὄκιμον (ōkimōn) *ocimum*, but ροδοδενδρον *rhododendron*. The ending -ων (-ōn) usually remains -on, e.g. *erigeron* (ἐριγερων), *cotyledon* (κοτυλεδων), and compounds of *pogon* (πωγων), *siphon* (σιφων), *stemon* (στημων), etc. Terminal -η sometimes becomes -a, e.g. ἐρεικη (ereikē) *erica*; usually, however, it remains -e, e.g. *aloe* (ἀλοη), *helxine* (ἐλξινη), *oenanthe* (ὄινανθη), *daphne* (δαφνη), etc. Whereas Latin adjectives in

the nominative end in *-us* (m.), *-a* (f.) or *-um* (n.), *-is* (m., f.) or *-e* (n.), Greek adjectives display a disconcerting variety of nominative endings, e.g. *-os* (m.), *-a* (f.), *-ov* (n.); *-ovs* (m.), *-η* (f.), *-ovv* (n.); *-os* (m.), *-os* (f.), *-ov* (n.); *-ov* (m., f., n.); *-ηs* (m., f.), *-es* (n.); *-is* (m., f.), *-i* (n.); *-as* (m.), *-alη* (f.), *-a* (n.), etc. It is, accordingly, a simplifying procedure when adopting Greek adjectives as botanical epithets to give them the Latin endings *-us* (m.), *-a* (f.), *-um* (n.). Thus *πλατυφύλλος* (m. & f.), *-ov* (n.) becomes *platyphyllos*, *-a* *-um*. The exceptions are words ending in *-ηs*, which is better transliterated as *-es*, e.g. *γογγυλωδης* (roundish) becomes *gongyloides*, *γγ* being transliterated as *ng*; *-οειδης* becomes *-oides* (see below), but even this can be converted into an adjective of the First Declension; thus *rhomboides* in botanical Latin can also be rendered as *rhomboideus* (m.), *rhomboidea* (f.), *rhomboideum* (n.). For the declension of these, see Chapter V.

However, an adjectival epithet published with a Greek ending should keep in agreement with the gender of the generic name with which it is associated, e.g. *acaulos* (m., f.), *acaulon* (n.).

#### GENDER OF GREEK NOUNS AND ADJECTIVES

Nouns in Greek as in Latin are masculine, feminine or neuter; qualifying adjectives agree with them in gender, number and case. A Greek-English lexicon indicates the gender of a noun by adding the definite article: *δ* (masculine), *η* (feminine), *το* (neuter).

Greek nouns taken into Latin retain their original gender, and compounds derived from two or more Greek words take the gender of the last unless the ending is altered. Thus *ceras* (*κέρας*, horn) is neuter, and its compounds, such as *Aceras*, *Aegiceras*, *Xanthoceras*, are accordingly treated as neuter; their genitive singular ends in *-ceratis*. Alteration of *-ceras* to *-cera*, as in *Tetracera*, produces, however, a feminine noun, with the genitive singular ending in *-cerae*; alteration of *-ceras* to *-cerōs* as in *rhinoceros*, *Anthoceros*, *Dendroceros*, *Megaceros*, *Phaeoceros*, produces a masculine noun with the genitive singular ending in *-cerotis*. Similarly *Dipterocarpus*, *Hymenocarpus*, *Stenocarpus* and all other modern compounds ending in the Greek masculine *-carpos* (*καρπος*, fruit) or *-carpus* are treated as masculine, but those ending in *-carpa* or *-carpaea*, e.g. *Callicarpa*, *Polycarpaea*, are treated as feminine, and those in *carpon*, *-carpum* or *carpium*, e.g. *Polycarpon*, *Orthocarpum*, *Pisocarpium*, as neuter. These compounds with Latin endings are to be treated grammatically as Latin words.

Generic names ending in *-codon* (*κωδων*, bell), *-mecon* (*μηκων*, poppy), *-odon* (*οδων*, tooth), *-panax* (*παναξ*, all-heal), *-stemon* (*στημων*, warp, hence stamen), are treated as masculine.

Generic names derived from Greek which end in *-ma* (*μα*) are neuter,

unless this is a rendering of *mē* (*μη*); hence those ending in *-broma* (*βρωμα*, food), *-derma* (*δερμα*, skin), *-loma* (*λωμα*, hem, fringe), *-nema* (*νημα*, thread), *-phragma* (*φραγμα*, fence, hence partition, septum), *-sperma* (*σπερμα*, seed), *-stemma* (*στεμμα*, wreath, garland), *-stigma* (*στιγμα*, spot, hence stigma) and *-stoma* (*στομα*, mouth), are treated as neuter. Since so many Latin feminine nouns end in *-a*, these neuter nouns of Greek origin ending in *-ma* are somewhat disconcerting. Names derived from the feminine nouns *οσμη* (*օσμη*, smell) and *cnēmē* (*κνημη*, internode, spoke) are likewise feminine even when rendered as *osma* (e.g. *Meliosma*, *Xylosma*) and *Knema* (e.g. *Knema*, *Octoknema*).

Generic names ending in *-anthe* (*ἀνθη*, flower), *-opsis* (*օψις*, appearance) and *-taxis* (*ταξις*, order) are treated as feminine.

According to Sprague (1935): 'Modern generic names of plants ending in *-ops* were presumably modelled on the masculine Greek nouns *aigilops* (*ἀιγιλωψ*), denoting *Quercus Cerris* and also *Aegilops ovatus*, and *cynops* (*κυνωψ*), a name for *Plantago lanceolata*. They may therefore be regarded as nouns derived from *ōps* (*ὤψ*), m. f. n., meaning "eye" or "face", hence "facies" or "appearance". The word *cyclōps*, however, is used both as a masculine noun, and as an adjective, meaning "round-eyed", and both *monōps*, "one-eyed", and *chrysōps*, "gold-coloured, shining like gold", are adjectives. As far as their form is concerned, modern generic names ending in *ōps* might be either nouns or adjectives . . . since *ōps* itself may be masculine, feminine or neuter, the gender of modern generic names ending in *ōps* may also be masculine, feminine or neuter. Each generic name in *-ōps* will accordingly take the gender originally assigned to it. Thus *Balanops*, *Dryobalanops*, *Gyrinops* and *Mimusops* will be treated as feminine, and *Echinops* and *Euryops* as masculine, since these were the genders adopted by the authors of the respective names.'

Botanical generic names ending in *-odes* and *-oides* are now all treated as feminine, in accordance with the *International Code of botanical Nomenclature*, even though a few, e.g. *Santaloides*, have been often treated as neuter. The terminations *-oides* (i.e. *-οειδης*) and *-odes* (i.e. *-ωδης*) are adjectival endings indicating resemblance. Consequently generic names such as *Nymphaoides* and *Omphalodes* are really adjectives treated as substantives, the word qualified, e.g. *βοτανη* (f.), *arbor* (f.), *herba* (f.), *planta* (f.), being omitted. Adjectives such as *βατρυοειδης* (like a bunch of grapes), *δακτυλοειδης* (finger-like) and *ροδοειδης* (rose-like) were often used in classical Greek, and an adjective 'was able normally to stand alone without a substantive as subject, object or predicate, or after a preposition, in almost every position indeed in which a substantive might stand' (Atkinson, 1933). Translated into Latin, the masculine and feminine ending *-οειδης*

(i.e. *οειδῆς*) and the neuter *-οειδῆς* (i.e. *οειδῆς*) become *-oides*. This comprises two parts, i.e. the *-o-* (-*o-*) which belongs to the stem and *-ειδῆς* (having the nature of, resembling) from *εἶδος* (shape, kind, nature). The *-oi-* of *-oides* should accordingly be pronounced as *oi* and not as a diphthong (i.e. not as in English 'adenoid'). In classical Latin such words took the gender of the noun providing the stem—thus *sesamoides* was neuter like *sesamum*—and their gender is not evident from their form. Such names used in zoology are mostly treated as masculine.

Pre-Linnaean authors found the ending *-oides* very handy when naming new genera. To indicate a resemblance to a genus already known, they simply took the stem of its name and added *-oides*. This practice annoyed Linnaeus exceedingly. Denouncing it as the 'common and safe refuge of the idle', he declared in his *Critica botanica* that 'generic names ending in *-oides* are to be banished from the domain of botany', and he himself gave them short shrift. About a hundred generic names in *-oides* coined by Tournefort, Boerhaave, Rivinius, Dillenius, Vaillant, Plukenet, Knaut and others fell before his reforming zeal. Thus *Aloides* became *Stratiotes*, *Plumbaginoides* became *Boerhavia*, *Staphylocarpoides* became *Royena*, *Tribuloides* became *Trapa*, and so on. When such pre-Linnaean genera were not sufficiently distinct in his opinion to merit re-naming, he simply treated their offending *-oides* names as synonyms of the genera with which he fused them. *Nymphoides*, for example, became part of *Menyanthes*; *Omphalodes* became part of *Cynoglossum*. When at a later date followers of Tournefort re-established these suppressed genera, they usually restored their pre-Linnaean names. Despite Linnaeus's caustic remarks and his efforts to rid botany of such names for good and all, *Agrimonioides*, *Alyssoides*, *Buglossoides*, *Chrysanthemoides*, *Nymphoides*, etc., still persist as legitimate generic names, and others, such as *Arachnoides*, have been added to them. It is nomenclaturally important to note that when zealous followers of Linnaeus such as Loefling, Jacquin, Rottböll and Solander used such designations as *Celosioides*, *Malpighioides*, *Petesioides*, *Scirpoides*, *Schoenoides*, *Sideroxyloides*, *Staehelinoides*, *Viscooides*, they did not intend these to be permanent generic names but proposed them simply as token names or provisional designations (*nomina fluxa*) indicative of resemblance, to be replaced later by correctly formed names.

#### FORMATION OF COMPOUNDS

As stated in the *International Code of botanical Nomenclature*, recommendation 73G: 'A compound word or epithet combining elements

derived from two or more Greek or Latin words should be formed, as far as practicable, in accordance with classical usage', i.e. by analogy with words existing in classical Greek or Latin. These are of two main kinds: (1) The co-ordinate compound in which two words of equal importance for the meaning are joined, e.g. *gynandrus* formed from *gyne* (*γυνή*, woman) and *aner* (*ἀνήρ*, man) and indicating that the stamens are adnate to the pistil and *hermaphroditus* (*έρμαφροδίτος*) from *Hermes* (*Ερμῆς*, Mercury) and *Aphrodite* (*Αφροδίτη*, Venus) indicating that both stamens and pistil are present in the same flower. (2) The subordinate compound in which a main element is qualified by a subordinate element joined to it, e.g. *platyphyllus* (*πλατυφύλλος*, broad-leaved), *macranthus* (*μακρανθός*, large-flowered); here the element *platy-* (*πλατύς*, broad) indicates the kind of *phyllon* (*φύλλον*, leaf), *macro-* (*μακρός*, large) the kind of *anthos* (*ἀνθός*, flower). In these the adjectival first components are directly derived from adjectives having an independent existence. The stems of nouns and verbs, followed usually by a connecting vowel, as well as prefixes derived from prepositions and adverbs, can be similarly used. The qualifying subordinate element can, however, be the last component as in *phyllophorus* (*φύλλοφόρος*, leaf-bearing). It then usually refers to some action or process affecting the first component. For the generic name *Cheilolepton* used by Fé instead of *Leptocheilus* (*λεπτοχειλός*, narrowlip) and adjectives such as *phyllomegus* (with a large leaf) used by Velloso and Steudel, instead of *megalophyllus* (*μεγαλοφύλλος*, large-leaved), there is some classical precedent in such a noun as *onagros* (*οναγρός*, wild ass, from *όνας*, ass, *άγριος*, wild) with an adjective appended to the stem of a noun.

PREFIXES (see p. 301) include *a-* or *an-* (*ἀ-* or *ἀν-*, lacking), *amphi-* (*ἀμφι-*, in two ways), *di-* (*δι-*, twice), *ecto-* (*ἐκτό-*, on the outside), *endo-* (*ἐνδό-*, on the inside), *epi-* (*ἐπί-*, upon), *eu-* (*εὐ-*, good, well), *hemi-* (*ἡμι-*, half), *para-* (*παρά-*, near, beside), *peri-* (*περί-*, around).

SUFFIXES (see p. 305) for forming nouns of Greek origin include those indicative of smallness, e.g. *-ium* or *-ion* (*-ιον*, n.), *-idium* or *-idion* (*-ιδίον*, n.) and *-iscus* or *-iscos* (*-ικός*, m.) or of relationship, e.g. *-ides* (*-ιδῆς*, m.), or the result of a process or action, e.g. *-ma* (*-μά*, n.), or the agent or doer, e.g. *-tes* (*-της*, m.). Adjectival suffixes include *-ticus* or *-ticos* (*-τικός*), attached to the stem of a verb, and *-eus*, *-eius*, *-eos* or *-eios* (*-εος*, *-ειος*) attached to the stem of a noun, meaning 'pertaining to' or 'noted for'; *-icus* or *-icos* (*-ικός*) or, after *-i*, *-acus* (*-ακός*) 'belonging to'; *-inus* or *-inos* (*-ινός*) 'resembling', often used of colours.

The formation of compounds (both from Latin and Greek) is summarized in the *International Code* as follows:

(a) *In a true compound (as distinct from pseudo-compounds such as Myos-otis and nidus-avis) a noun or adjective in a non-final position*

appears as a bare stem without case-endings. As examples of accepted names contrary to this may be cited *Pachysandra* (from *παχυς*, thick, *ἀνηρ*, man), instead of *Pachyandra*, and *Peliosanthes* (from *πελιος*, livid, dark, *ἀνθος*, flower), instead of *Pelianthes*. When the stem (see p. 60) of the nominative singular, e.g. *thrix* (*θριξ*, hair), differs from that of the genitive singular, e.g. *trichos* (*τριχος*, of hair), the latter is normally used as the first component of a compound, although even here there is classical precedent for the occasional use of both the short nominative stem and the longer stem as in *Nemastylis* and *Nematosstylis*; thus *phos* (*φως*, a contraction of *φωος*, light) and its genitive *photos* (*φωτος*, of light) have yielded *phosphoreo* (*φωσφορεω*, to bring light) and *photodotes* (*φωτοδοτης*, giver of light). The stem of a word (see p. 61) can be ascertained by removing the case-ending of the genitive singular; thus the genitive singular of *odus* (*δδους*, tooth) is *odontos* (*δδοντος*, of the tooth), which yields the stem *odont-* used in many ancient compounds such as *odontalgia* (*δδονταλγια*, tooth-ache), *odontoides* (*δδοντοειδης*, tooth-shaped), *odontophorus* (*δδοντοφορος*, bearing teeth) and modern compounds such as *Odontadenia*, *Odontochilus*, *Odontoglossum*, *Odontopteris*, *Odontosoria*, *Odontostigma*, etc. Thus *derma* (*δερμα*, skin) gives the combining form *dermato-*; *gala* (*γαλα*, milk) *galacto-*; *aner* (*ἀνηρ*, man) *andro-*; and so on.

(b) Before a vowel the final vowel of this stem, if any, is normally elided (*Chrys-anthemum*, mult-*angulus*) with exception of the Greek *y* and *i* (*Poly-anthus*, *Meli-osma*). Elision is the cutting out of a vowel or syllable, exemplified in *Hippuris* (*ἱππουρις*, horsetail, from *ἵππος*, horse, and *ουρα*, tail). Special cases are provided by *neo-* (*νεο-*, new, newly) and *pseudo-* (*ψευδο-*, false) which in classical usage sometimes occasionally retained their terminal *o* even when followed by a vowel, e.g. *neoades* (*νεοαδης*, freshly watered), *neoides* (*νεοειδης*, youthful in form), *pseudoenedra* (*ψευδοενεδρα*, feigned ambuscade), *pseudoepeo* (*ψευδοεπεο*, speak falsely), although in general it was then suppressed. *Peri-* (*περι*, around) and *pro-* (*προ-*, in front of, before) do not change even before a vowel, e.g. *perianthes* (*περιανθης*, with flowers all round), *perierctus* (*περιερκτος*, enclosed), *proales* (*προαλης*, sloping), *proengonos* (*προεγγονος*, great-grandson). Thus the stem and nominative singular of *limne* (*λιμνη*, marsh) are identical, but the terminal *-e* (*-η*) is normally elided in compounds when it comes before a vowel, e.g. *limnasia* (*λιμνασια*, marshy ground), *Limnanthemum*, *Limnanthes*.

(c) Before a consonant the final vowel is normally preserved in Greek (mono-carpus, *Poly-gonum*, *Coryne-phorus*) except that *a* is commonly replaced by *o* (*Hemerocallis* from *hemera*); in Latin the final vowel is reduced to *i* (multi-color, *menthi-folius*, *salvii-folius*). In compounds of *limne* (see above) the terminal *-e* (*-η*) is replaced by *-o*, e.g. *limnobios*

(*λιμνοβιος*, living in a lake), *limnocharis* (*λιμνοχαρις*, grace of the marsh), *Limnochloa*, *Limnophila*, *Limnophyton*. In derivatives of *hals* (*ἀλς*, salt, sea), *hali-* (*ἀλι-*) tends to refer to the sea, e.g. *halimus* (*ἀλιμος*) but *halo-* (*ἀλο-*) to salt, e.g. *halophilus*, *Halopegia*, or the sea, e.g. *Halodule*, *Halophila*, *Haloragis*.

(d) If the stem ends in a consonant, a connecting vowel, Greek *o*, Latin *i*, is inserted before a following consonant (*Odont-o-glossum*, *cruc-i-formis*). This is a useful general rule to which even in classical times there were exceptions. The connecting vowel makes the word easy to say and pleasant to hear. In late Latin *-o-* sometimes replaced *-i-* as a combining vowel, following the classical precedent of *albogalerus* (i.e. *albus galerus*, white hat) and *albogilvus* (whitish-yellow); its descendant, botanical Latin, thus has *albiflorus* (white-flowered) and *albomarginatus* (white-margined). Similarly the standard combining form of *ater* (black) in botanical Latin is *atro-*, as in *atrocaeruleus* (dark blue), *atrolabius* (black-lipped), *atropurpureus* (black-purple), *atrovilaceus* (black-violet), despite the classical *atricapillus* (black-haired). No connecting vowel follows the prefix *syn-* (*συν-*, with, united) which becomes *sym-* (*συμ-*) before *b*, *p* or *ph*, e.g. *symbios* (*συμβιος*, living together), *symplectus* (*συμπλεκτος*, twined together), and *sy-* (*συ-*) before *st*, e.g. *systylus* (*συστυλος*, with columns standing close). The stem *melan-* (*μελαν-*) of the adjective *melas* (*μελας*, black) is generally followed by the connecting vowel *o*, as in *melanostictus* (*μελανοστικτος*, black-spotted), but can be used without it, as in *melandryos* (*μελανδρυος*, dark as an oak).

In classical Greek the rough breathing rendered as *h* was lost when another word was prefixed to it. Thus *haema* (*αιμα*, blood) when prefixed by *an-* (*ἀν*, not, without) became *anaemia*, not *anhaemia*. However, as observed by Nybakken, this elimination of the aspirate has been irregular both in Roman and in modern usage. 'Because of familiarity with the Greek words in their simple form (i.e. not compounded), the aspirate *h* was always felt to be present and therefore an *h* was included in the [transliterated] Greek stem regardless of whether it was used as the first or as a later component term.' Thus the Greek *ἀνυδρος* became *anhydros* in transliteration. Insertion of the *h* is recommended because it helps to make the meaning and derivation clear. The initial *ρ* of a Greek word transliterated as *rh*, e.g. *rhiza* (*ριζα*, root, rhizome), should have an additional *r* added to it when preceded by a vowel, e.g. *Glycyrrhiza* (*γλυκυρριζα*, liquorice, from *γλυκος*, sweet, *ριζα*, root), *leptorrhiza* (*λεπτορριζα*, with a thin root, from *λεπτος*, small, slender), but as many reputable authors, Linnaeus among them, have omitted this additional *r*, it is best regarded as optional and an author's original spelling, as in *Lemna polyrhiza*, should be accepted.



## GREEK WORD ELEMENTS

The following list gives the more important Greek elements used in the formation of botanical names. For further suggestions as to appropriate epithets, reference should be made to the works of R. B. Brown (1956) and of E. C. Jaeger (1955); epithets chosen should be checked in Liddell & Scott's *Greek-English Lexicon*. On grammatical matters, the works of P. Kretschmer (1899), O. E. Nybakken (1960) and E. Wikén (1951) are particularly helpful. Saint-Lager (1880) and R. Strömb erg (1940) provide lists of Greek plant names with commentaries. André's *Lexique* (1956) lists plant names taken into classical Latin from Greek.

For Greek prefixes, see p. 304; for Greek adjectival suffixes, see p. 310; for Greek substantival suffixes, see p. 306.

a- (ἀ-): without, not, un-  
above: *see hyper, epi-*  
Acantha (ἀκανθα, *f.*): spine, thorn, prickle  
Achyron (ἀχυρον, *n.*): chaff, husks  
acid: *see oxyx*  
Acis, acidos (ἀκις, ἀκιδος, *f.*): pointed object  
Acme (ἀκμη, *f.*): highest point  
Acorn: *see Balanos*  
acros (ἀκρος): at the tip, end, summit  
Actis, actinos (ἀκτις, ἀκτινος, *f.*): ray  
Aden, adenos (ἀδην, ἀδενος, *f.*): gland  
agathos (ἀγαθος): good  
Agrostis (ἀγρωστις, *f.*): grass  
all-: *see pan-*  
allo- (ἀλλο-): prefix, different, foreign, strange  
alone: *see monos*  
amblys (ἀμβλυς): blunt, dulled  
Ampelos (ἀμπελος, *f.*): climbing plant, vine  
an- (ἀν-): without, not  
ancho (ἀγχω): verb, strangle; hence *-anche* as ending of names of poisonous plants  
ancient: *see palaeos*  
Ancistron (ἀνκιστρον, *n.*): fish-hook  
Angion (ἀγγειον, *n.*): vessel, receptacle  
Angle: *see Gonia*  
Anthemon (ἀνθεμον, *n.*): flower  
Anthera (ἀνθηρα, *f.*): *in mod. botany*, anther  
antheros (ἀνθηρος): flowering

Anthos (ἀνθος, *n.*): flower; in combinations the Latinized form *-anthus* is treated as masculine  
Apple: *see Melon*  
arche-, archi- (ἀρχη-, ἀρχι-): first, chief, arch-  
argyros (ἀργυρος): silvery  
Aspect: *see Opsis*  
Ass: *see Onos*  
Aulos (ἀυλος, *m.*): pipe, flute, tube  
Auricle: *see Otion*  
  
back, at the: *see opisthen*  
Back: *see Notos*  
bad-: *see dys-*  
Balanos (βαλανος, *f.*): acorn  
Ball: *see Sphaera*  
Band: *see Desmos, Taenia, also Zone, Zoster*  
Bark: *see Phloios*  
barys (βαρυς): heavy  
basis (βασις, *f.*): base, pedestal  
bastard: *see nothos*  
Batos (βατος, *f.*): bramble  
Beard: *see Pogon*  
bearing: *see phoros*  
Beauty: *see Callos*  
Bed: *see Cline*  
Bell: *see Codon*  
Belly: *see Gaster*  
Belos (βελος, *n.*): missile, especially dart, arrow  
below: *see hypo*  
Belt: *see Zoster, Zone*  
bent: *see campitos, campylos, cyphos*

Bios (βιος, *m.*): life  
Bird: *see Ornis*  
bitter: *see picros*  
black: *see melas*  
Bladder: *see Cystis, Physa*  
Blastos (βλαστος, *m.*): shoot  
Blepharis (βλεφαρις, *f.*): eyelash  
Blepharon (βλεφαρον, *n.*): eyelid  
Blood: *see Haema*  
Blood-vessel: *see Phleps*  
Body: *see Soma*  
Bone: *see Osteon*  
Border: *see Craspedon, Loma*  
botyoides (βοτυροειδης): like a bunch of grapes  
Botrys (βοτρυς, *m.*): bunch of grapes  
Bowl: *see Lecanas*  
brachys (βραχυς): short  
Bramble: *see Batos*  
Branch: *see Thallos, Clados*  
broad: *see platys*  
Broma (βρωμα, *n.*): food  
Bryon (βρυον, *n.*): moss, liverwort  
Bundle: *see Desme*  
Bus (βους, *m., f.*): cattle

cacos (κακος): bad, ugly  
caenos (καινος): new, fresh; *to be distinguished from cenos (κενος)*, empty, coenos (κοινος), common  
Calamos (καλαμος, *m.*): reed  
calli- (καλλι-): *in compounds*, beautiful  
Callos (καλλοс, *n.*): beauty  
calos (καλοс): beautiful  
Calymma (καλυμμα, *n.*): head-covering, hood  
Calyptra (καλυπτρα, *f.*): veil  
Calyx (καλυξ, *f.*): covering of a flower or fruit, *hence calyx*  
campitos (καμπτοс), campylos (καμπυλοс): bent, curved  
Cardia (καρδια, *f.*): heart  
Carpbos (καρφοс, *n.*): any small dry body, twigs, etc.  
Carplos (καρποс, *m.*): fruit  
carrying: *see phoros*  
Carya (καρυа, *f.*): nut-bearing tree  
Caryon (καρυοн, *n.*): nut  
Cattle: *see Bns*  
Caulos (καυλοс, *m.*): stem  
Centron (κεντροн, *n.*): a sharp point, sting, spur of a cock

Cephalo (κεφαλη, *f.*): head  
Ceras (κεραс, *n.*): horn  
Chaete (χατη, *f.*): loose flowing hair, mane  
Chaff: *see Achyron*  
chalco- (χαλκо-): *in compounds*, copper  
chamae- (χαμαι-): *in compounds*, on the ground, hence low-growing  
changed: *see meta-*  
Charis (χαριс, χαριтос, *f.*): grace  
Cheilos, Chilos (χειλос, *n.*): lip  
Chicory: *see Seris*  
Chion (χιон, *f.*): snow  
Chiton (χιτωн, *m.*): tunic, covering  
Chlaena (χλαιна, *f.*): cloak, covering  
Chlamys (χλαмис, *f.*): military cloak, mantle  
Chloe (χλои, *f.*): young green corn or grass  
chloros (χλωроп): greenish-yellow, green  
Chroma (χρωма, *n.*): colour, complexion  
chryso- (χρυсо-): *in compounds*, gold  
Circle: *see Cyclos, Gyros*  
Clados (κλαδοс, *m.*): branch, shoot  
Class: *see Phylon*  
Claw: *see Onyx*  
cleft: *see schistos*  
cleistos (κλειστοс): closed, shut  
Cliff: *see Cremonos*  
Cline (κλιн, *f.*): couch  
Cloak: *see Chlaena, Chlamys*  
Club: *see Coryne*  
Cneme, cnema (κνηмη, *f.*): leg, inter-node, spoke  
Cnemis (κνηмис, *f.*): greave, legging  
Coccos (κоккос, *m.*): grain, seed, round gall, pill  
Codon (κωδωн, *m.*): crier's bell  
coelos (κοιλοс): hollow  
Colour: *see Chroma*  
Column: *see Stele*  
Come (κοмп, *f.*): hair of the head  
Cone: *see Strobilus*  
Conis (κονис, *f.*): dust  
Container: *see Thece*  
coppery: *see chalco-*  
Cord: *see Sira*  
Coryne (κорунж, *f.*): club  
Cotyle (κοтулъ, *f.*): small cup, anything hollow  
Couch: *see Cline*

Course: *see Dromos*  
 Covering: *see Calymma, Calyptra, Chiton, Chlaena, Chlamys*  
 Craspedon (*κρασπεδον*, *n.*): edge, border  
 Cremnos (*κρηνος*, *m.*): cliff  
 Crest: *see Lophos*  
 Crinon (*κρινον*, *n.*): lily  
 crooked: *see rhaibos*  
 Crown: *see Stelma, Stemma, Stephane, Stephanos*  
 Ctonos (*κτονος*, *m.*): murder  
 Cup: *see Cyathos, Cotyle, Cymbion*  
 curved: *see campitos, campylos, gyros*  
 Cyanos (*κυανος*, *m.*): dark blue colour  
 Cyathos (*κυαθος*, *m.*): ladle, cup  
 Cybe (*κυβη*, *f.*): head  
 Cyclos (*κυκλος*, *m.*): circle  
 Cymbion (*κυμβιον*, *n.*): small cup  
 cyphos (*κυφος*): bent, hunch-backed  
 Cystis (*κυστις*, *f.*): bladder  
 Dactylos (*δακτυλος*, *m.*): finger  
 Daphne (*δαφη*, *f.*): sweet bay, laurel  
 dark: *see phaeo-*  
 Dart: *see Belos*  
 dasys (*δαυος*): shaggy, hairy, thick-haired  
 Day: *see Hemera*  
 deca (*δεκα*): ten  
 deltoides (*δελτοειδης*): delta-shaped, triangular  
 Dendron (*δενδρον*, *n.*): tree  
 Derma (*δερμα*, *n.*): skin  
 Desert: *see Eremia*  
 Desme (*δεσμη*, *f.*): bundle, handful  
 Desmos (*δεσμος*, *m.*): band, halter, anything used for tying  
 Dictyon (*δικτυον*, *n.*): net  
 didymos (*διδυμος*): double, two-fold, twin  
 different: *see allo-, heteros*  
 Discos (*δισκοс*, *m.*): quoit, disc  
 dolichos (*δολιχοс*): long  
 Doron (*δωρον*, *n.*): gift, present  
 Dory (*δορο*, *n.*): shaft, spear  
 double: *see didymos*  
 Doxa (*δοξа*, *f.*): repute, glory  
 Dromos (*δρομοс*, *m.*): course, running place  
 dry: *see xeros*  
 Dung: *see Scatos*  
 Dust: *see Conis*  
 dys- (*δυο-*): bad-, ill-

Ear: *see Otion*  
 earlier: *see proteros*  
 Echidna (*εχιδνа*, *f.*): viper  
 Echinos (*εχων*, *m.*): hedgehog, sea-urchin  
 Echis (*εχιс*, *m.*): viper  
 ectos (*εκтос*): outside  
 egg-like: *see oodes*  
 eleo-: *see heleo-*  
 endo- (*ενдо-*): prefix, within, inside  
 entire: *see holos*  
 entos (*ενтос*): within, inside  
 epi (*επи*): upon  
 Eremia (*ερημιа*, *f.*): desert, wilderness  
 Eriion (*ερион*, *n.*): wool  
 erythros (*ερυθрос*): red  
 eu- (*εу-*): prefix, good, well-developed, normal, true  
 even: *see homalos*  
 evening: *see hesperos*  
 Eye: *see Omma*  
 Eyelash: *see Blepharis*  
 Eyelid: *see Blepharon*  
 Fan: *see Rhapis*  
 Feather: *see pteron*  
 female: *see thelys, also gyne*  
 Fern: *see Pteris*  
 few: *see oligos*  
 Fig-tree: *see Syce*  
 Finger: *see Dactylos*  
 Fire: *see Pyr*  
 first: *see protos*  
 Flower: *see Anthemon, Anthos*  
 Folds: *see ptyches*  
 Food: *see Broma*  
 Foot: *see Podion*  
 Forest: *see Hyle*  
 Form: *see Morphe*  
 fragrant: *see myristicos*  
 Fringe: *see Loma*  
 Fruit: *see Carpos*  
 Fungus: *see Myces*  
 Galee (*γαλεη*, *f.*): weasel, polecat  
 Garland: *see Stelma, Stemma, Stephane, Stephanos*  
 Gaster (*γαστηρ*, *f.*): belly  
 Geton (*γετων*, *m.*): neighbour  
 Gift: *see Doron*  
 Giton (*γειτων*, *m.*): neighbour  
 Gland: *see Aden*

Glass: *see Hyalos*  
 Glocchin (*γλωχιν*, *f.*): projecting point  
 Glory: *see Doxa*  
 Glossa (*γλωσσа*, *f.*): tongue  
 Glottis (*γλωттis*, *f.*): mouth of the windpipe  
 glycys (*γλυκυς*): sweet to the taste or smell  
 Goat, *see Tragos*  
 gold: *see chryso-*  
 Gone (*γονη*, *f.*): offspring, reproductive organs, womb  
 gongylodes (*γογγуладηс*): roundish  
 gongyloides (*γογγулодеснηс*): roundish  
 Gonia (*γωνιа*, *f.*): angle, corner  
 Gony (*γωνи*, *n.*): knee, node (of grass)  
 good: *see agathos*  
 Grace: *see Charis*  
 Gramma (*γραμма*, *n.*): written character, letter, writing  
 Gramme (*γραμμη*, *f.*): line, stroke of a pen  
 Grapes, bunch of: *see Botrys*  
 Graphe (*γραφη*, *f.*): drawing, picture, writing  
 Graphis (*γραφис*, *f.*): pencil  
 Grass: *see Agrostis, Chloë*  
 Greave: *see Cneme*  
 green: *see chloros*  
 gymnos (*γυμнос*): naked, unclad, unarmed, stripped  
 Gyne (*γυνη*, *f.*): woman, a female  
 gyros (*γυпос*): rounded, curved  
 Gyros (*γυпос*, *m.*): ring, circle  
 Haema (*αιμа*, *n.*): blood  
 Hair: *see Chaete, Come, Thrix, Trichion*  
 hairy: *see dasys, lasios*  
 half: *see hemi-*  
 Hals, halos (*ձաս*, *ձօս*, *m.*): salt  
 Hare: *see Lagos*  
 Head-band: *see Mitra*  
 Head-covering: *see Calymma*  
 Heap: *see Soros*  
 Heart: *see Cardia*  
 heavy: *see barys*  
 Hedgehog: *see Echinos*  
 hedys (*հծս*): pleasant to the taste or smell  
 helicoides (*հլկօսեմդս*): of winding or spiral form  
 Helios (*հլոս*, *m.*): sun

B.L.—K

Helix (*ձլէց*, *f.*): anything of spiral shape  
 helodes (*ձլածդս*): frequenting marshes  
 Hem: *see Loma*  
 Hemera (*հմբրա*, *f.*): day  
 hemi- (*հմո-*): prefix half-  
 hesperos (*հօթերօս*): of evening, western  
 heteros (*էրեսօս*): of another kind, different  
 holos (*ձլօս*): whole, entire  
 homalos (*ձմալօս*): even, level  
 Honey: *see Meli*  
 Hood: *see Calymma*  
 Hook: *see Ancistron*  
 Horn: *see Ceras*  
 Husks: *see Achyron*  
 Hyalos (*նալօս*, *f.*): glass  
 Hydor (*նձար*, *n.*): water  
 hygros (*նցրօս*): wet, moist  
 Hyle (*ձլդ*, *f.*): forest, woodland  
 Hymen (*նմդր*, *m.*): thin skin, membrane  
 hyper (*իներ*): over, above  
 hypo (*ինտօ*): under, beneath  
 hypsi- (*ինի-*): prefix, on high, aloft  
 Hystera (*նօտրերա*, *f.*): womb  
 -idion (-իծօն, *n.*): in compounds, a diminutive suffix, e.g. oinidion (*օնւծօն*), poor wine  
 inside: *see entos*  
 Internode: *see Cneme*  
 Ion (*լօն*): violet  
 Ios (*լօս*): poison, rust  
 isos (*լօօս*): equal  
 K: *see under C*  
 Keel: *see Tropis*  
 Kidney: *see Nephros*  
 Knee: *see Gony*  
 lagaros (*լայարօս*): thin, narrow, lanky.  
 Lagos (*լայօս*, *m.*): hare  
 lanky: *see lagaros*  
 large: *see macros*  
 lasios (*լաօտօս*): shaggy, woolly  
 Laurel: *see Daphne*  
 Leaf: *see Phyllon*  
 Lecanos, Lecanon (*լեկանօս*, *m.*; *լեկանոն*, *n.*): wine-bowl  
 Lecythos (*լոյկութօս*, *f.*): oil-flask  
 Leek: *see Prason*

Legging: *see* Cnemis  
 leios (*λειος*): smooth to the touch, e.g. *lelophloios* (*λειοφλοιος*), smooth-barked; *lelophyllus* (*λειοφυλλος*), smooth-leaved  
 Leon, leontos (*λεων, λεοντος, m.*): lion  
 Lepis, lepidos (*λεπις, λεπιδος, f.*): scale (of fish, snake), flake  
 leptos (*λεπτος*): fine, thin, slender, weak, e.g. *leptoblastos* (*λεπτοβλαστος*), with feeble shoots; *leptorrhizos* (*λεπτορριζος*), with thin delicate root  
 Leucon (*λευκον, n.*): white colour, e.g. *lencanthermon* (*λευκανθεμον, n.*), white flower; *leucanthes* (*λευκανθης*), white-flowering; *leucocarpus* (*λευκοκαρπος*), yielding white fruit  
 level (even): *see* homalos  
 Lichen (*λεχην, m.*): tree-moss, lichen, liverwort  
 Life: *see* Bios  
 Lily: *see* Crinon, Lirion  
 Limon (*λεμων, m.*): moist grassy place, meadow  
 Lion: *see* Leon  
 Lip: *see* Cheilos  
 Lirion (*λειριον, n.*): white lily  
 Lithos (*λιθος, m.*): stone  
 Lobos (*λοβος, m.*): lobe of the ear, capsule or pod  
 Loma (*λωμα, n.*): hem, fringe, border  
 long: *see* dolichos  
 Lophos (*λοφος, m.*): crest  
 low-growing: *see* chamae-  
 loving: *see* phil-  
 loxos (*λοξος*): slanting, oblique, cross-wise  
  
 macros (*μακρος*): large  
 malacos (*μαλακος*): soft to the touch  
 Mallos (*μαλλος, m.*): flock of wool, e.g. *mallotos* (*μαλλωτος*), fleecy, lined with wool  
 many: *see* plei-  
 Mark: *see* Sema  
 marshes, of: *see* helodes, telmatiaeos  
 Meadow: *see* Limon, Nomos  
 Mecon (*μεκων, f.*): poppy  
 megal- (*μεγαλο*), *megas* (*μεγας*): big, large  
 melas (*μελας*): black, dark, e.g. *melanostictos* (*μελανοστικτος*), black-spotted

Meli (*μελι, n.*): honey  
 Melon (*μηλον, n.*): apple or other tree-fruit  
 Membrane: *see* Hymen  
 Mene (*μηνη, f.*): moon  
 Meris (*μερις, f.*): part, portion  
 mesos (*μεσος*): middle, in the middle  
 meta- (*μετα*): *in compounds*, changed  
 micro- (*μικρος*): small, little, e.g. *microcarpos* (*μικροκαρπος*), bearing small fruit  
 middle: *see* mesos  
 Milk: *see* Gala  
 Mitra (*μιτρα, f.*): head-band, head-dress  
 moist: *see* hygros  
 monos (*μονος*): alone, solitary  
 Moon: *see* Mene  
 Morphe (*μορφη, f.*): form, shape  
 Mound: *see* Soros  
 Mountain: *see* Oreo-, Oros  
 Mouse: *see* Mys  
 Mouth: *see* Stoma  
 Murder: *see* Ctonos, Phonos  
 Mushroom: *see* Myces  
 Myces (*μυκης, m.*): mushroom or other fungus  
 myrios (*μυριος*): numberless, countless  
 myristicos (*μυριστικος*): fragrant  
 Myron (*μυρον, n.*): sweet oil, perfume  
 Mys (*μυς, m.*): mouse or rat  
  
 naked: *see* gymnos  
 nanos, nannos (*νανος, ναννος*): dwarf  
 narrow: *see* stenos, also lagaros  
 Navel: *see* Omphalos  
 near: *see* para  
 Neighbour: *see* Geton, Giton  
 Nema (*νημα, n.*): thread  
 neos (*νεος*): young, new  
 Nephros (*νεφρος, m.*): kidney  
 Nesos (*νησος, f.*): island  
 Net: *see* Dictyon  
 Neuron (*νευρον, n.*): sinew, nerve  
 Night: *see* Nyx  
 Node: *see* Gony  
 Nomos (*νομος, m.*): pasture  
 nothos (*νοθος*): bastard, base-born  
 Noton (*νωτον, n.*): the back  
 Notos (*νωτος, m.*): south wind, south or south-west quarter

Notos (*νωτος, m.*): the back  
 numberless: *see* myrios  
 Nut: *see* Caryon  
 nyctios (*νυκτιος*): of the night, nocturnal  
 Nyx, nyctos (*νυξ, νυκτος, f.*): night  
  
 oblique: *see* plagios  
 ochros (*ωχρος*): pale, wan, sallow, pale yellow, e.g. *ochroleucus* (*ωχρολευκος*), whitish-yellow, yellowish-white  
 odont- (*οδοντ-*): relating to teeth  
 Odour: *see* Osme  
 Odus, odontos (*οδοус, οδοντος, m.*): tooth  
 Oenos (*ονος, m.*): wine  
 Offspring: *see* Gone  
 Oil-flask: *see* Lecythos  
 oligos (*ολιγος*): little, small, few, e.g. *oligophyllos* (*ολιγοφυλλος*), having few leaves  
 Omma (*ομμα, n.*): eye  
 Omphalos (*ομφαλος, m.*): navel, central part of flower containing seed-vessel  
 Onos (*ονος, m., f.*): ass  
 Onyx (*ονυξ, m.*): talons, claws, nail, hence clawed base of petal  
 odes (*ωδης*): egg-like  
 ophio- (*οφιο-*): *in compounds*, relating to snakes  
 Ophis (*οφις, m.*): snake  
 opisthen (*οπισθεν*): behind, at the back  
 opse (*οψε*): late  
 Opsis (*οψις, f.*): aspect, appearance, hence resemblance  
 oreo-, ori- (*ορεο-, ορει-*): *in compounds*, mountain-, e.g. *origenes* (*ορειγενης*), mountain-born  
 ores- (*ορεα-*): *in compounds*, mountain-, e.g. *oresbios* (*ορεαβιος*), living on mountains  
 Ornis (*ορνις, m.*): bird  
 Oros (*ορος, n.*): mountain, hill  
 orthos (*ορθος*): straight, upright  
 Osme (*οσμη, f.*): smell, odour, fragrance  
 Osteon (*οστεον, n.*): bone  
 Otion (*οτιον, n.*): auricle, little ear  
 outside: *see* ectos  
 oxy- (*οξεις*): sharp, keen, shrill, pungent, acid, e.g. *oxyodus* (*οξειοδοус*), with sharp teeth; *oxyphyllus* (*οξειφυλλος*), with pointed leaves  
 phytos (*φυτον, n.*): plant  
 picros (*πικρος*): bitter, sharp, pungent in taste

Pilos (*πῖλος, m.*): anything made of felt, especially a hat

Pine: *see* Pittys

Pipe (tube): *see* Aulos, Siphon, Solen

Pittys (*πίτης, f.*): pine

plagios (*πλάγιος*): placed sideways, sloping, oblique

Plant: *see* Phyton

platys (*πλατύς*): wide, broad, e.g. *platyphyllos* (*πλατυφύλλος*), broad-leaved

pleasant: *see* hedys

plectos (*πλεκτός*): plaited, twisted

Plectron (*πληκτρον, n.*): something to strike with, *hence* a cock's spur

Plegma (*πλεγμα, n.*): anything twined or twisted

plei- (*πλει-*): *in compounds*, many-

Pleura (*πλευρα, f.*): rib

Ploce (*πλοκη, f.*): anything twisted or woven, web

Podion (*ποδιον, n.*): foot, e.g. of a vase

poecilos (*ποικιλος*): several-coloured, spotted, dappled

Pogon (*πογων, m.*): beard

Point: *see* Acis, Glochin

Point, highest: *see* Acme

-pointed: *see* oxys

Poison: *see* Ios

Polecat: *see* Galee

poly- (*πολυ-*): *in compounds*, much-, many-

Poppy: *see* Mecon

porphyreos (*πορφυρεος*): purple, e.g. *porphyranthes* (*πορφυρανθης*), with purple blossom; *porphyronotos* (*πορφυρονωτος*), purple-backed

Poros (*πορος, m.*): ford, strait, passage, pore, opening

Potamos (*ποταμος, m.*): river

Prason (*πράσον, n.*): leek

Present (gift): *see* Doron

Prickle: *see* Acantha

proteros (*προτερος*): earlier

protos (*πρωτος*): first, foremost

Psammos (*ψαμμος, f.*): sand

psilos (*ψιλος*): bare, stripped of hair, smooth

Psittacos (*ψιττακος, m.*): parrot

Pteris (*πτερις, f.*): fern

Pteron (*πτερον, n.*): feather, wing

Ptyches (*πτυχες, f.*): folds

purple: *see* phoeniceos, porphyreos

-pus (-πονος): *in compounds*, -footed

Pyr (*πυρ, n.*): fire

Pyramis (*πυραμις, f.*): pyramid

Pyren (*πυρην, m.*): fruit-stone

Pyros (*πυρος, m.*): wheat

Ragged: *see* rhacois

Rat: *see* Mys

Ray: *see* Actis

red: *see* erythros, phoeniceos

Reed: *see* Calamos

Reproductive organs: *see* Gonae

Resemblance: *see* Oopsis

Rhabdos (*ράβδος, f.*): rod, wand

rhabdotos (*ράβδωτος*): striped

Rhachis (*ράχις, f.*): backbone, midrib of a leaf

rhacois, rhacodytos (*ράκοεις, ράκοδυτος*): ragged, torn, tattered

rhaibos (*ραιβος*): crooked, bent

Rhipis, rhipidos (*ρίπις, ρίπιδος, f.*): fan

Rhiza (*ρίζα, f.*): root

rhodo- (*ρόδο-*): *as prefix in compounds*, rose-, rosy

Rhodon (*ρόδον, f.*): rose

Rhynchos (*ρύγχος, n.*): snout, muzzle, beak

rhybos (*ρύβος*): shrivelled, wrinkled

Rhytis, rhytidos (*ρύτις, ρύτιδος, f.*): pucker, wrinkled, e.g. *rhytidodes* (*ρύτιδωδης*), wrinkled-looking

Rib: *see* Pleura

River: *see* Potamos

Rock: *see* Petra

Rod: *see* Rhabdos

Root: *see* Rhiza

Rope: *see* Sira

Rose: *see* Rhodon

rosy: *see* rhodo-

rounded: *see* gyros

roundish: *see* gongyloides, gongyloides

Row: *see* Stichos

Rust: *see* Ios

Salt: *see* Hals

Sand: *see* Psammos

Sandal: *see* Pedilon

sapros (*σαπρος*): rotten, putrid

Sarx (*σαρξ, f.*): flesh

Scale: *see* Lepis, Pholis

scato- (*σκατο-*): relating to dung

scented: *see* myristicos

CH. XIX]

schistos (*σχιστος*): cleft, divided

Scia (*σκια, f.*): shadow

Sciadion (*σκιαδιον, n.*): sunshade, parasol, umbel

scleros (*σκληρος*): hard

Scyphos (*σκυφος, m.*): cup

Sea: *see* Thalassa

Seed: *see* Sperma, *also* Coccus

Sema (*σημα, n.*): sign, mark, token

Semia (*σημεια, f.*): military standard, vexillum

Seris (*σερις, f.*): endive, chicory

Shaft: *see* Dory

shaggy: *see* lasios

Shape: *see* Morphe

sharp: *see* oxys

Shoe: *see* Pedilon

Shoot: *see* Blastos, Clados

shrivelled: *see* rhybos

Sideros (*σιδηρος, m.*): iron

silvery: *see* argyros

Siphon (*σιφων, m.*): tube, pipe

Sira (*σειρα, n.*): cord, rope

Skin: *see* Derma

slender: *see* lagaros, leptos

Slice: *see* Tomos

sloping: *see* plagios

Smell: *see* Osme

smooth: *see* psilos, leios

Snake: *see* Ophis

Snout: *see* Rhynchos

Snow: *see* Chion

soft: *see* malacos

Solen (*σωλην, m.*): pipe

solitary: *see* monos

Soma (*σωμα, n.*): body

Soros (*σωρος, m.*): heap, mound

South: *see* Notos

Spatha (*σπαθη, f.*): a broad flat blade; *in modern botany*, spathe

Spear: *see* Dory

Sperma (*σπερμα, n.*): seed

Sphaera (*σφαιρα, f.*): ball, globe, sphere

Spike: *see* Stachys

Spine (thorn): *see* Acantha

Spira (*σπειρα, f.*): anything twisted, wound, coiled

Spiral: *see* Helix, Spira, *also* helicoides

Spora (*σπορα, f.*): seed; *in modern botany*, spore

spotted: *see* stictos

SPUR: *see* Centron, Plectron

Stachys (*σταχυς, m.*): ear of corn; *in modern botany*, spike

Stalix (*σταλιξ, f.*): stake

Standard: *see* Semia

Staphyle (*σταφυλη, f.*): bunch of grapes

Stege (*στεγη, f.*): Stegos (*στεγος, n.*): shelter

Stele (*στηλη, f.*): monument, column, pillar

Stelma (*στέλμα, n.*): crown, garland, wreath

Stem: *see* Caulos

Stema (*στέμμα, n.*): penis, stamen

Stemma (*στέμμα, n.*): wreath, garland

Stemon (*στημων, m.*): thread; *in modern botany*, stamen

stenos (*στενος*): narrow, e.g. steno-

phyllos (*στενοφύλλος*), narrow-leaved

Stephane (*στεφανη, f.*): Stephanos (*στεφανος, m.*): something which surrounds or encircles, *hence* crown, wreath

Stephos (*στεφος, n.*): crown, wreath, garland

Stichos (*στιχος, m.*): row

stictos (*στικτος*): pricked, tattooed, spotted, dappled

Stigma, stigmatos (*στιγμα, στιγματος, n.*): tattoo-mark, mark, spot; *in modern botany*, stigma

Stoma (*στομα, n.*): mouth, opening

Stone, mineral: *see* Lithos

Stone of a fruit: *see* Pyren

stout: *see* pachys

straight: *see* orthos

strangle: *see* ancho, *also* Ctonos

strepitos (*στρεπτος*): twisted

striped: *see* rhabdotos

Strobilus (*στροβιλος, m.*): round ball, spinning top, pine; *in modern botany*, a cone or cone-like structure

Strophe (*στροφη, f.*): turning, twist

Stylos (*στυλος, m.*): pillar, wooden pole, writing implement (through confusion with Latin *stilus*; *see* p. 42; *hence* in modern botany, style)

Sun: *see* Helios

surrounding: *see* peri

Swamp: *see* Telma

sweet: *see* glycys

Swelling: *see* Tylos

Sword: *see* Xiphos

Syce (συκη, *f.*): fig-tree  
 Syrinx (συριγξ, *f.*): pipe

Taenia (ταινια, *f.*): band, head-band, ribbon  
 Tail: *see* Ura  
 Talon: *see* Onyx  
 tattered: *see* rhacos  
 Tattoo-mark: *see* Stigma  
 Taxis (ταξις, *f.*): arrangement, order, regularity  
 Teat: *see* Thele  
 Telma (τελμα, *n.*): standing water, pond, marsh, swamp; e.g. telmatiaeos (τελματιαιος), of a marsh ten: *see* deca  
 Thalassa (θαλασσα, *f.*): sea  
 Thallos (θαλλος, *m.*): branch; *in modern botany*, thallus  
 Thamnos (θαμνος, *m.*): bush, shrub  
 Thece (θηκη, *f.*): case, chest, container  
 Thele (θηλη, *f.*): teat, nipple  
 thelys (θηλυς): female  
 thick: *see* pachys  
 Thorn: *see* Acantha  
 Thread: *see* Nema  
 Thrix (θριξ, *f.*): hair  
 Tomos (τομος, *m.*): slice, piece  
 Tongue: *see* Glossa  
 Tooth: *see* Odus  
 trachys (τραχυς): rough, shaggy  
 Tragos (τραγος, *m.*): he-goat  
 Trema (τρημα, *n.*): aperture, opening  
 triangular: *see* deltoides  
 trich- (τριχ-): *in compounds*, hair  
 Trichion (τριχιον, *n.*): small hair  
 Trochos (τροχος, *m.*): wheel  
 Tropis (τροπη, *f.*): keel of ship  
 Tube: *see* Aulos, Siphon, Solen  
 Twist: *see* Plegma, Ploce, Strophe  
 twisted: *see* plectos  
 Tylos (τυλος, *m.*): callus, lump, swelling, knob  
 Typos (τυπος, *m.*): blow, impression, print, replica, pattern, model, etc.; hence *in modern botany*, type  
 Umbel: *see* Sciadion  
 uneven: *see* anisos  
 upon: *see* epi

upright: *see* orthos  
 Ura (ουρα, *f.*): tail

Veil: *see* Calyptra  
 Vein: *see* Phleps  
 Vessel (receptacle): *see* Angion  
 Violet: *see* Ion  
 Viper: *see* Echidna

Wallet: *see* Pera  
 Water: *see* Hydor  
 Weasel: *see* Galee  
 Web: *see* Ploce  
 western: *see* hesperos  
 Wheat: *see* Pyros  
 Wheel: *see* Trochos  
 white: *see* leucos  
 whole: *see* holos  
 Wilderness (desert): *see* Eremia  
 Wine: *see* Oenos  
 Wing: *see* Pteron  
 Woman: *see* Gyné  
 Womb: *see* Gome, Hystera  
 Wood (forest): *see* Hyle  
 Wood (timber): *see* Xylon  
 Wool: *see* Eriom, Mallos  
 woolly: *see* lasios  
 Wreath: *see* Stelma, Stemma, Stephane, Stephanos  
 wrinkled: *see* rhytos, Rhytis  
 Writing: *see* Gramma, Graphe

xanth- (ξανθ-): *in compounds*, yellow  
 xanthos (ξανθος): yellow, e.g. xantholeucos (ξανθολευκος), pale yellow  
 xeros (ξηρος): dry  
 xiph- (ξιφ-): *in compounds*, sword  
 Xiphos (ξιφος, *n.*): sword  
 xuthos (ξουθος): *in botany*, golden yellow  
 Xylon (ξυλον, *n.*): wood, timber, log

yellow: *see* xanthos  
 Yoke: *see* Zygon

Zone (ξωνη, *f.*): belt, girdle, originally a woman's  
 Zoster (ξωστηρ, *m.*): belt, girdle, originally a warrior's  
 Zygon (ζυγον, *n.*), zygos (ζυγος, *m.*): yoke

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## CHAPTER XX

Formation of Names and Epithets  
in Latin

*Saepe enim et verba non latina dico ut vos intelligatis. [Often indeed I use non-Latin words in order that you may understand.]*

ST. AUGUSTINE OF HIPPO (A.D. 354-430)  
*Ennar. in Psalm cxxxiii, 8*

Sources of names, p. 282—The Linnaean canons, p. 283—Formation of compounds in Latin, p. 286—Names commemorating persons, p. 290—Ingenious methods of name formation, p. 292—Epithets commemorating persons, p. 294—Anagrams, p. 296—Geographical and ecological epithets, p. 297—Latinization of native names, p. 297—Names of intergeneric hybrid groups, p. 298—References, p. 299.

The discovery of new organisms and the need to provide them and also hitherto misnamed organisms with names, which must not duplicate names already used, together make it necessary for systematists continually to publish new names. Such names are mostly generic or specific. As stated in the *International Code of botanical Nomenclature* (1961): 'The name of a genus is a substantive in the singular number or a word treated as such. It may be taken from any source whatever and may even be composed in an absolutely arbitrary manner.' Likewise 'the epithet of a species may be taken from any source whatever and may even be composed arbitrarily'. Botanical nomenclature has greatly changed since Linnaeus ruled in 1737 (*Critica botanica*, no. 229): 'Generic names which have not a root derived from Greek or Latin are to be rejected'. Nevertheless the *International Code* recommends botanists who are forming names 'to use Latin terminations in so far as possible; to avoid names not readily adaptable to the Latin tongue; not to make names which are very long or difficult to pronounce in Latin'. It is based on the principle that 'scientific names of taxonomic groups are treated as Latin regardless of origin'.

## SOURCES OF NAMES

Rabelais (c. 1495-1553) introduced into his account of the herb 'Pantagruelion', i.e. hemp (*Cannabis sativa*), an essay on the origin of plant names (*Pantagruel*, 3 cap. 50; 1546), noting that some plants were named

after their first discoverer, cultivator, user, etc., as *Mercurialis* from Mercury, *Gentiana* from Gentius; some from their provenance, as *Ligusticum* from Liguria, *Stoechas* from the Stoechades, etc.; others from their reputed virtues, as *Aristolochia*, *Malva*, etc.; others by contrast or irony, as *Holosteon* which means 'all bone, because on the contrary there is no herb more fragile and tender'; yet others by allusion to mythological transformations, as *Daphne*, *Narcissus*, etc.; some from resemblance, as *Hippuris*, like a horse's tail, *Alopecurus*, like a fox's tail, *Delphinium*, like a dolphin, etc. According to their origins the majority of generic names still come within these Rabelaisian groups. Botanists naming a new genus usually try to find a distinctive feature and coin a name by combining Greek or Latin words to express this, or they name it after a person, for preference its discoverer or someone who has studied the group, occasionally a personage of antiquity, as in the names *Caligula*, *Periclesia*, *Semiramisia*, *Proclesia*, *Sophoclesia*, *Lysiclesia*, *Socratesia*, *Polyboea*, *Themistoclesia*, etc., given to genera of *Ericaceae*.<sup>1</sup> Less often they adopt or adapt a native name, e.g. *Aucuba*, *Kokoona*, *Madhuca*, *Retama*, or modify the name of a related genus, e.g. by adding prefixes or suffixes such as *Para-*, *Neo-*, *-ella*, *-astrum*, *-opsis*, etc., to it, or concoct an anagram from such a generic name (see below). The only limitations are those imposed voluntarily by the good taste and common sense of the author (cf. Rowley, 1956). No modern botanist as yet has disregarded the convenience of others by coining generic names quite so long as Dybowski's *Swartschewskiechinogammarus*, *Toxophthalmoechinogammarus* and *Cornutokytyodermogammarus*, although *Pteropentacoilanthus* comes close to them, or has seen fit to suggest a series of amorous incidents with Dolly, Flory, Isa, Mary, Nanny, Peggy, Phyllis and Polly by means of names such as Kirkaldy's *Dolichisme*, *Florichisme*, *Isachisme*, *Marichisme*, *Nanichisme*, *Peggichisme*, *Phyllochisme* and *Polichisme* scarcely relevant to the bugs thus designated.

## THE LINNAEAN CANONS

The tendency of early eighteenth-century botanists to use generic names such as *Anapodophyllum*, *Hydroceratophyllum*, *Hypophyllocarpodendron*, was effectively checked by Linnaeus from 1737 onwards, partly on aesthetic grounds, mainly, however, because he believed that naturalists should be able to memorize both the names and characters of genera (cf. Cain, 1958; Stearn, 1959) and that awkward, uncouth, very long or meaningless names laid an unnecessary burden on the

<sup>1</sup> *Diogenes rotundus*, found in water-tubs, is however, a unicellular green alga.

memory. At the age of twenty-nine he accordingly published in his *Critica botanica* (1737) a series of rules which guided him in his own publications, established standards of procedure for his followers, and led him to discard on a grand scale the names used by his predecessors. As E. L. Greene (1906) observed: 'Such expurgation of generic nomenclature as was then made could never have been effected through the mere will of one individual reformer. Botanists in general as men of culture must have been already more or less disgusted with the abundance of cheap and easily made names that were current.' Linnaeus provided welcome means of reform.

Of those rules which concern the names themselves the following<sup>1</sup> merit attention, not least because the more rigid of Linnaeus's followers, notably Schreber, likewise changed names which did not conform to them.

220 'No sane person introduces "primitives" as generic names. By "primitives", as is well known, are meant words which have no root, no derivation, no significance. What I press is that we should do nothing irrational: wherefore, if we would not be considered utter barbarians, let us not invent names which cannot be derived from some root or other.'

221 'Generic names formed from two complete and distinct words are to be banished from the commonwealth of botany.' Linnaeus therefore replaced the two-word generic name *Caryophyllus aromaticus* by *Caryophyllus*; *Primula veris* by *Primula*, and so on. Later, however, he used many such two-word names as specific epithets (for lists, see Nieuwland, 1911; Hylander, 1954).

222 'Generic names compounded of two entire Latin words are scarcely to be tolerated. To make generic names is freely allowed in the Greek language, but not in the Latin. . . . Anyone can readily perceive for himself that Latin words do not combine so easily as Greek.' Linnaeus, nevertheless, accepted such compounds as *Sapindus*, *Passiflora*, *Sanguisorba*, *Saxifraga* and *Sempervivum*.

223 'Hybrid generic names, namely those made from a Greek word compounded with a Latin word, and the like are not to be recognized.'

224 'Generic names compounded of two words, one a piece of a generic term for plants, and an entire word, are unworthy of botanists.' Linnaeus accordingly rejected as generic names *Anemone-Ranunculus*, *Bellis-leucanthemum*, *Chenopodio-morus*, *Lilio-asphodelus* and the like.

225 'A generic name to which one or two syllables are prefixed, to make it denote an entirely different genus from that which it denoted before, is not to be admitted.' Such names rejected by Linnaeus included *Bulbocastanum*, *Chamaebuxus*, *Chamaepericlymenum*, etc.

226 'Generic names ending in -oides are to be banished from the domain of botany.' On this matter of -oides, see Chapter XIX, p. 266.

<sup>1</sup> These are quoted from Sir Arthur Hort's English translation published by the Ray Society in 1938.

227 'Generic names made up of other generic names with a syllable added at the end are not satisfactory.' Names rejected by Linnaeus included those ending in -ella, e.g. *Acetosella*, *Cedronella*, in -astrum, e.g. *Bellidiastrum*, *Veronicastrum*, in -aria, e.g. *Linaria*, *Persicaria*, and in -ago, e.g. *Juncago*, *Erucago*.

228 'Generic names with a similar sound give a handle to confusion.' As examples Linnaeus listed, among others, *Alsine*, *Alsinoides*, *Alsinella*, *Alsinastrum*, *Alsinastroides*, *Casia*, *Cassia*, *Cassida*.

229 'Generic names which have not a root derived from Greek or Latin are to be rejected. . . . However, I retain barbarous names when I can obtain a root suggesting a possible derivation from Latin or Greek, in which case such names have the value for me of new coinages, e.g. *Datura*.'

235 'Generic names which are adjectival are less satisfactory than those which are substantives.' Nevertheless Linnaeus used the appropriate name *Gloriosa*.

236 'Generic names should not be misused in order to perpetuate the memory of Saints and men distinguished in some other branch of learning or to secure their favour.'

237 'Generic names taken from poetry or mythology, consecrated names of kings, and names of those who have advanced the study of botany I retain.' Those mentioned include *Andromeda*, *Circeea*, *Daphne*, *Atropa*, *Ixora*, *Nyssa*, *Gentiana*, *Eugenia*, *Asclepias*, *Bignonia* and *Cliffortia*.

238 'Generic names formed to preserve the memory of a botanist who has deserved well of the science I retain as a religious duty.' To this Linnaeus appended an account of links between botanists and the plants named after them, enabling the name to be kept ever in the memory, as *Bauhinia*, which 'has two-lobed leaves or two as it were growing from the same base, being called after the noble pair of brothers Bauhin'. In forming such names, the following points should be observed. 'It must be formed from his surname, not his first name', e.g. *Duranta* (not *Castorea*), *Isnardia* (not *Dantia*). 'One must take care that names do not occur which can be confused with something else.' Thus *Alpina* would be bad, *Alpinia* good. 'The pronunciation of the name should be made as easy as possible.' Hence Linnaeus adopted *Barleria* instead of *Barreliera*. 'Care must be taken that the names are uniform and that they end in -a, as though they were feminine substantives.' Thus Linnaeus preferred *Breynia* to *Breyniana*, *Brunia* to *Bruniades*, *Lewisania* to *Lewisanus*. 'Names that are too long must be cut down to avoid getting ell-long names.'

239 'Generic names which have been bestowed without harm to botany should, other things being equal, be allowed to pass.'

247 'Greek generic names are to be written in Latin characters.'

248 'The terminations of generic names and the pronunciation should be made as easy as possible.'

249 'Generic names an ell long, or difficult to pronounce, or unpleasant are to be avoided.' Linnaeus dealt drastically with such caonyms, as Rowley (1956) has termed them. For example, he shortened *Staphyloidendron* to *Staphylaea*, *Anapodophyllum* to *Podophyllum*, *Ananthocyclus* to *Anacyclus*,

altered *Leontopetalon* to *Leontice* and substituted *Galanthus* for *Leuco-Narciso-Lirion*.

Many of these canons have long been disregarded; indeed adherence to Nos. 225, 227 and 229 would deprive botany of the means by which many pleasing and useful names have been coined. Nevertheless, they ensured that modern botanical nomenclature at least began with a series of well-formed, euphonious and convenient names.

#### FORMATION OF COMPOUNDS IN LATIN

Although Latin does not so abound in compounds as Greek (see Chapter XIX), enough exist in classical Latin to provide models from which procedure can be deduced. The following notes are mostly taken from *Sprachregeln für die Bildung . . . botanischer Namen* 1899 by Paul Wilhelm Kretschmer (1866–1956), a distinguished German classical scholar and philologist, from 1899 to 1937 professor of linguistics at the university of Vienna, for many years editor of the periodical *Glotta*.

1 The first and each non-final component of a Latin compound consists of the stem of a word, to which is usually added the connecting vowel *-i*. Thus from *flamma* (flame) is derived *flammicomus* (having fiery hair); from *aurum* (gold) *auricomus* (golden-haired); from *anguis* (snake) *anguitenens* (snake-holding); from *flos* (flower; gen. *floris*) *floriger* (flower-bearing); from *odor* (scent) *odorifer* (scented); from *rupes* (rock; gen. *rupis*) *rupicapra* (chamois). A few nouns, namely abstract nouns ending in *-or*, neuter nouns ending in *-us* (gen. *-eris*) and some such as *sanguis*, can form compounds from a shortened stem, e.g. from *vulnus* (wound) *vulnifer* (wound-bringing), *vulnificus* (wound-making); from *sanguis* (blood), *sanguisuga* (blood-sucker) and the alternative forms *sanguilentus* and *sanguinolentus* (bloody).

In classical Latin compounds, when a stem ended in *-i*, as in *gloria*, *medius*, *officium*, etc., this sufficed as a connecting vowel, a single *-i* being used, instead of the *-ii* which would result from joining the final *-i* of the stem and a connecting vowel *-i*, hence *glorificus* (not *gloriificus*), *mediterraneus* (not *mediiterraneus*), *officerda* (not *officiiperda*). In botanical Latin, however, when the stem of a generic name ends in *-i*, as in *Artemisia* and *Nerium*, this is now retained together with the connecting vowel *-i*, as in *artemisiifolius* and *neriifolius*. When the stem does not end in *-i*, as in *Anemone*, *Hordeum*, *Halimum*, *Malva*, *Narcissus*, the case-ending is removed and replaced by a single *-i*, as in *anemonifolius*, *halimifolius*, *malvifolius* and *narcissiflorus*. The stem of many masculine and neuter names plus the connecting vowel *-i* coincides in form with their genitive singular, e.g. *coronop-i* and *coronopi* (genitive of *coronopus*), *thym-i* and *thymi* (genitive of *thymus*). Thus, when Linnaeus replaced such pre-Linnaean phrase-names as *Ananthocyclus coronopi folio* (i.e. *Ananthocyclus* with the leaf of *Coronopus*) by

the binomial *Cotula coronopifolia* and *Genista minima aethiopica foliis thymi confertis* (minute African *Genista* with crowded leaves of *Thymus*) by *Aspalathus thymifolia*, the resulting epithets (*coronopifolius*, *-a*, *-um*, *thymifolius*, *-a*, *-um*, etc.) were the same as if he had simply appended *-folius*, *-a*, *-um*, to the genitive singular. This coincidence obscured the grammatical nature of the connecting *-i* and misled many later authors into forming epithets in this very manner, e.g. *erucaefolius* (from *Eruca*, gen. *Erucae*) instead of *erucifolius*; *tiliaeefolius* (from *Tilia*, gen. *Tiliae*) instead of *tiliifolius*, and so on. This matter is discussed at length by Saint-Lager (1893). Fortunately under the *International Code of botanical Nomenclature* the use of a wrong connecting vowel or vowels in a name or an epithet is to be treated as an orthographic error and corrected.

Adjectives forming the first component are similarly treated, e.g. *alticaulis* (high-stemmed, with tall stems) and *altispex* (looking down from a height) from *altus* (high), *longicaulis* (long-stemmed) and *longipetalus* (long-petalled) from *longus* (long).

In late Latin particularly, but occasionally in classical Latin, owing to the influence of Greek, compounds were sometimes formed with *-o* instead of *-i* as a connecting vowel, e.g. *tunicopallium* from *tunica* and *pallium*; such words as *atropurpureus*, *atrovirens* and *albomarginatus*, are not to be treated as orthographical errors, but accepted as examples of standard procedure in botanical Latin for words beginning with *atro-* and *albo-*.

2 A preposition, an adverbial form or a numeral can serve as the first component of a Latin compound. Thus the preposition *per* (through, all over) when added to an adjective has an intensifying effect, e.g. *amarus* (bitter), *peramarus* (very bitter), *pusillus* (small), *perpusillus* (very small). The preposition *sub* (under, near), on the other hand, has a weakening effect, expressed by 'somewhat' or 'almost' or the termination '-ish', e.g. *subamarus* (somewhat bitter, bitterish), *subsessilis* (almost sessile), or indicates a lower part, e.g. *subcavus* (hollow below), *subscriptus* (written beneath). For other examples, see Chapter X, p. 225. Adverbial forms may be fused with participles, e.g. *suaveolens* (sweet-smelling, fragrant) from *suavis* (sweet) and *olens* (smelling), *altescandens* (high-climbing) from *alte* (highly, on high) and *scandens* (climbing), *longerepens* (long-creeping) from *longe* (long, lengthwise) and *repens* (creeping). Numbers are expressed by *uni-* (1-), e.g. *uniflorus* (one-flowered), *bi-* (2-), e.g. *bifolius* (two-leaved), *tri-* (3-), e.g. *trifoliolatus* (with three leaflets), *quadr-* (4-), *quadri-*, *quadru-* used before *p* and *m*, e.g. *quadrangulus* (four-angled), *quadridentatus* (four-toothed), *quadrupes* (four-footed), and so on; for further examples, including those of Greek origin, see Chapter VIII, p. 113.

3 The stem of a verb is rarely employed in Latin as the first component of a compound. When so used, it is followed by *-i*, e.g. *vomificus* (emetic) from *vomo* (vomit).

4 The final vowel of the first component is usually but not invariably cut out when the next component begins with a vowel. Stems of one syllable retain their vowel. Examples are *aquaevus* (of the same age; from *aequus* and *aevus*), *multangulus* and *multiangulus* (many-angled, polygonal; from

*multus* and *angulus*), *semustus* and *semius* (half-burned; from *semi* and *ustus*), *triangulus* (three-angled).

5 In forming adjectives the last component of a compound either stands unaltered or is given a special adjectival ending. Thus the last component is unchanged in the adjective *quadrupes* (four-footed; from *quadrus* and *pes*) and *tricolor* (three-coloured; from *tri-* and *color*). Nouns of the First and Second Declensions (see Chapter V, pp. 68, 70) are converted into adjectives ending in *-us*, *-a*, *-um*, e.g. *auricomus* (golden-haired; from *aurum* and *coma*), or in *-is*, *-e*, e.g. *multiformis* (many-shaped; from *multus* and *forma*), *perennis* (perennial, from *per* and *annus*), *multiramis* (many-branched, from *multus* and *ramus*). Nouns of the Third Declension form adjectives ending in *-us*, *-a*, *-um*, e.g. *inodorus* (without smell, from *in-* and *odor*). Nouns of the Fourth Declension form adjectives ending in *-us*, *-a*, *-um*, e.g. *multifructus* (many-fruited, from *multus* and *fructus*), or *-is*, *-e*, e.g. *bicornis* (two-horned, from *bi-* and *cornu*). Compounds formed from *caput* (head) end in *-ceps*, e.g. *multiceps* (many-headed). The terminations *-ius*, *-ium*, *-ia* can be used with stems of any group, e.g. *brevinodius* (with a short nodes, from *brevis* and *nodus*).

6 The last component of a compound adjective can also be derived from a verb and usually ends in *-us*, or *-a* when of active meaning, in *-tus* like a participle when of passive meaning. Thus from *vagor* (to wander, range) is derived *montivagus* (mountain-roaming), *nemorivagus* (wandering in woods), etc., from *colo* (cultivate, dwell, inhabit), *undicola* (dwelling in the sea), etc. The verbs *fero* and *gero* (bear, carry) have given numerous compounds in *-fer* and *-ger*, e.g. *florifer* and *floriger* (flower-bearing), *frondifer* (leaf-bearing), *fructifer* (fruit-bearing). Of passive meaning are compounds ending in *-fidus*, e.g. *multifidus* (many-cleft; from *findere*, to split), and *-gena*, e.g. *montigena* (mountain-born; from *gignere*, to bring forth). The perfect passive participle can also be used, e.g. *biformatus* (two-shaped; from *formare*, to shape).

7 The gender, grammatical nature and meaning of a word in Latin can be modified or changed by the use of an appropriate suffix.

A substantival or noun suffix is a component added to the end of the stem or base of a word which converts it into a noun, if a verb, or modifies its meaning, if already a noun. Suffixes (see Chapter XXI) play an important part in the formation of Latin words. Each suffix has characteristics of its own, which concern its general meaning or effect, the kind of word to which it can be attached and the gender which it gives. Thus *-arium* (n.) indicates a place where something is found, usually a receptacle, and hence is attached to the stem of a noun, e.g. *herbarium* (from *herba*, plant), *nectarium* (from *nectar*, nectar); *-orium* (n.) indicates a place or a space of time in which something happens or is done and hence is attached to the stem of the supine of a verb, e.g. *laboratorium* (laboratory, place of work) from *laboratum* (fit to toil), the supine of *laborare* (to toil, take pains). The suffix *-etum* (n.) indicates a habitat dominated by the plant named in the stem, e.g. *quercetum* (an oak-wood) from *quercus* (oak).

The suffixes *-io* (f.) and *-ura* (f.; to be distinguished from the Greek *οὐρα* or *υρα*, tail) designate either an action or the result of an action and hence

are attached to the stem of the supine of a verb, e.g. *collectio* (collection; from *colligere*, to gather), *sectio* (section; from *secare*, to cut), *fissura* (cleft; from *findere*, to split). The suffixes *-men* (n.) and *-mentum* (n.), like the Greek *-ma* (n.), likewise designate an action or the result of an action, e.g. *semen* (seed; from *serere*, to sow), *fragmentum* (a piece broken off; from *frangere*, to break), *segmentum* (a piece cut off; from *secare*, to cut). The suffixes *-or* (m.) and *-rix* (f.) indicate the agent of an action and hence are also attached to the stem of the supine of a verb, e.g. *collector* (collector; from *colligere*, to gather). The suffixes *-bulum* (n.); *-brum* (n.); *-crum* (n.) and *-trum* (n.) usually indicate the means, the instrument or place of an action, e.g. *infundibulum* (funnel; from *infundere* to pour into), *involucrum* (involucre; from *involvere*, to wrap up, cover).

The suffixes above have mostly been used in the formation of technical terms. Suffixes traditionally associated with the stems of nouns and indicating a reduced or smaller state, incomplete resemblance or inferiority take a greater part in the formation of generic and sectional names. Thus, the suffixes *-aster* (m.), *-astra* (f.), *-astrum* (n.), *-ister* (m.), *-istra* (f.), *-istrum* (n.) indicate inferiority or incomplete resemblance and are attached to the stems of generic names, e.g. *oleaster*, *oleastrum* (the wild olive, an inferior kind of *olea*, the olive).

The diminutive suffixes *-lus* (m.), *-la* (f.) and *-lum* (n.) are not used indiscriminately. Their use is normally determined by the gender and declension of the noun providing the stem to which they are attached (cf. Weinhold, 1887). Thus the diminutive of *ramus* (m.; branch) is formed by adding the suffix *-ulus* (m.) to the stem *ram-*, this giving *ramulus* (m.; branchlet). *Capsula* (f.; capsule, literally 'a small box') is the diminutive of *capsa* (f.; box). *Vasculum* (n.; vasculum, literally 'a small vessel') is the diminutive of *vas* (n.; vessel). The suffixes *-ulus*, *-ula*, *-ulum* or, after *e* or *i*, *-olus*, *-ola*, *-olum*, *-ellus*, *-ella*, *-ellum*, *-illus*, *-illa*, *-illum* form compounds from nouns of the first and second declensions (see Chapter XXI, no. 306). The suffixes *-culus*, *-cula*, *-culum* form compounds from nouns of the Third and Fourth declensions. The suffixes *-cellus*, *-cella*, *-cellum*, *-cillus*, *-cilla*, *-cillum* form compounds from nouns of any declension. In botanical Latin, the suffix *-ella* has now come to be regarded, particularly by mycologists, as being simply a name-forming component to be attached to any personal name or any generic name of either Latin or Greek origin, usually without implication of smallness, e.g. *Englerella*, *Munkiella*, *Microthyriella*, *Phaeodimeriella*. Generic names with diminutive suffixes mostly formed from nouns, a few from adjectives, include *Armillariella*, *Campanula*, *Capsella*, *Fumariola*, *Gentianella*, *Gladiolus*, *Limosella*, *Mitella*, *Pinguicula*, *Pulsatilla*, *Ranunculus*, *Selaginella*.

The feminine suffixes *-ago* and *-ugo* (see p. 305) serve to indicate a resemblance or a property, e.g. *albugo* (a white spot) from *albus* (white), *asperugo* (a rough-leaved plant) from *asper* (rough), *plumbago* (black-lead) from *plumbum* (lead), *tussilago* (the plant coltsfoot) from *tussis* (cough). Their use and history in classical Latin is discussed by Ernout (1941); for Kuntze's peculiar use of *-ago*, see p. 293.

## NAMES COMMEMORATING PERSONS

When writing in Latin, as they usually did, sixteenth- and seventeenth-century scholars usually gave their names a Latin or Greek form. Thus Charles de l'Écluse (1525–1609), commemorated botanically in the genus *Clusia* and the species *Paeonia clusii*, *Tulipa clusiana*, etc., latinized his name as *Carolus Clusius*; writing in Italian to Matteo Caccini he signed himself 'Carlo Clusio'. Such scholarly names were formed in various ways, often simply by use of a Latin ending, e.g. *Bauhinus* from Bauhin, *Ferrarius* from Ferrari, *Fuchsius* from Fuchs, or by slight modification, e.g. *Bellonius* from Belon, *Dodonaeus* from Dodoens, *Lonicerus* from Lonitzer, or sometimes by translation, e.g. *Camerarius* from Kammermeister (the Bamberg family) or Kammerer (the Tübingen family), *Melanchthon* from Schwarzerd, *Tragus* from Bock, *Tabernaemontanus* from Bergzabern. Generic names commemorating them naturally derive from these Latinized forms, e.g. *Bauhinia*, *Bellonia*, *Cameraria*, *Dodonaea*, *Ferraria*, *Fuchsia*, *Lonicerca*, *Tabernaemontana*, *Tragia*. More modern examples are *Abauria* in honour of G. Doria and *Viridivia* in honour of P. J. Greenway.

As noted by Sarton (*Apprec. of Anc. & Mod. Sci. during the Renaissance*; 1955), 'in the Latin forms, it was often found necessary to duplicate consonants in order to keep preceding vowels short, e.g. *Ruellius* for *Ruel*, *Bellonius* for *Belon*, *Snellius* for *Snel*, *Hamellius* for *Hamel*, and then some authors believed wrongly that the original names were *Ruelle*, *Bellon*, *Snell*, *Hamelle*'.

The changes which Latin words underwent during the evolution of the present Romance languages from vulgar Latin, the standard Latin of the Roman Empire, were not, of course, everywhere the same, but were nevertheless regular enough to permit certain processes to be recognized and to be used in reverse when latinizing present-day names. Thus the Latin *clavis* (key) is the source of the Italian *chiave*, Spanish *clave* and *llave*, French *clef* and *clé*. Hence the Italian N. Chiavena (d. 1617) latinized his name as *Clavena* and is commemorated in *Achillea clavena*. The Latin *columna* (column) remained *columna* in Spanish but became *colonna* in Italian, *colonne* in French. Hence the Italian F. Colonna (1567–1650) latinized his name as *Columna* and is commemorated in the genus *Columnea* and *Romulea columnae*. The Latin *febris* (fever), vulgar Latin *febrem*, has produced Italian *febbre*, Spanish *fiebre*, French *fièvre*; from Latin *peregrinus* (stranger), vulgar Latin *peregrinum* (pilgrim), have come the Italian *pellegrino*, Spanish *peregrino*, French *pèlerin*. The vulgar Latin *calves sorices* (bats) is the source of French *chauves-souris*. In vulgar Latin, words which in classical Latin began with *sc-*, *sp-*, *st-* were preceded by an *i*, later

changed into *e-*, when spoken in Gaul and the Iberian Peninsula; hence *spatium* (space) by way of *ispatium* has become *espacio* in Spanish, *espace* in French. Knowledge of such changes explains why the Latinized forms made in accordance with them often diverge so much from the originals. Thus Cosson latinized the name of his friend Perraudière as *Perralderius*, commemorated in the genus *Perralderia* and *Epimedium perralderianum*. The course followed in the transformation of a word from French to Latin, and hence to be followed when latinizing a French name, is summarized by Weekley (1899); see also Dauzat (1944), Ewert (1943), Lebel (1959) and Lot (1931). For examples covering the Romance languages in general, see Gröber's elaborate survey (1884–92; A–C, 1884; D–G, 1885; H–M, 1886; M–P, 1887; Q–S, 1888; T–Z, 1889; Summary, 1892).

The final *t* in Latin often became *z* or *zz* in Italian, e.g. *palazzo* (palace) from *palatum* and *Venezia* from *Venetia*. De Notaris and Clementi reversed the process by latinizing Pestalozza as *Pestalotius*; hence the generic name *Pestalotia* commemorating Fortunato Pestalozza.

The invasions of Gaul and Italy by Germanic tribes in the early Middle Ages brought into Latin-speaking areas the German *w* which did not correspond exactly to the Gallo-Latin *v* of the fifth century A.D. and which was rendered sometimes by *v*, more often by *gu*. Thus the German *Waldrik* produced the French *Vaudry* and *Gaudry*; *Wilhelm* became *Villaume*, *Vuillerme*, *Guilhem*, *Guillaume* (cf. Lebel, 1959), whence the Italian *Guglielmo* and the Latinized form *Gulielmus*. When M. Wieland (1515–89) from Königsberg settled in Italy as a young man he italicized his name as 'Guilandini' and latinized it as *Guilandinus*, whence the generic name *Guilandina* commemorating him.

The name Linnaeus, contrary to frequent supposition, is not a Latinized version of Linné, but Linné is a shortened version of Linnaeus, just as Nobel is of Nobelius, Artedi of Arctaedius. Before the eighteenth century many Swedish peasants did not possess family surnames; each added to the baptismal name the genitive of the father's name with the suffix *-son* (son) or *-dotter* (daughter) according to sex. Thus Linnaeus's father was Nils Ingemarsson (1674–1733), the son of Ingemar Bengtsson and Ingrid Ingemarsdotter, and grandson of Bengt Ingemarsson and Ingrid Andersdotter. The family possessed a property in Småland called Linnegård after a big and aged linden tree (*Tilia*), *linn* being a now obsolete Swedish variant of *lind*. On registering at a university, students had to provide themselves with surnames. Ingrid Ingemarsdotter's two brothers Carl and Sven took the name Tiliander from this tree. Her son Nils Ingemarsson coined for himself the name Linnaeus referring to the same family linden, and her grandson

Carl Linnaeus made it famous. In his *Flora Suecica*, 157 (1745) he refers to *Tilia* as being 'vastissima in pago Stegaryd Sunnerboae Smolandiae, unde Tilandri et Linnaei dicti'. The name Linnaeus was thus of Latin form from the start, like many other Swedish family names ending in *-us*.

The *International Code of botanical Nomenclature* recommends that when a new name for a genus, subgenus or section is taken from the name of a person, it should be formed in the following manner:

(a) When the name of a person ends in a vowel, the letter *a* is added (thus *Botelia* after Boutelou; *Ottoa* after Otto; *Sloanea* after Sloane), except when the name ends in *a*, when *ea* is added (e.g. *Collaea* after Colla). The purpose of the last provision is to prevent confusion when writing in Latin about the plant and the person commemorated.

(b) When the name of a person ends in a consonant, the letters *ia* are added, except when the name ends in *er*, when *a* is added (e.g. *Kernera* after Kerner). In Latinized names ending in *us*, this termination is dropped before adding the suffix *ia* (e.g. *Dillenia* after Dillenius).

(c) The syllables not modified by these endings retain their original spelling, unless they contain letters foreign to Latin plant names or diacritic signs.

(d) Names may be accompanied by a prefix or a suffix or be modified by anagram or abbreviation. In these cases they count as different words from the original name. Examples are *Durvillea* and *Urvillea*, both after J. S. C. Dumont d'Urville; *Lapeirousia* and *Peyrousea*, both after P. Picot de La Peyrouse; *Englera*, *Englerastrum*, *Englerella*, *Englerina*, *Englerocharis*, *Englerodaphne*, *Englerodendron*, *Englerophoenix*, *Englerophytum*, all after Adolf Engler (1844–1930); *Neourania*, *Urbania*, *Urbanis*, *Urbanodendron*, *Urbanodoxa*, *Urbanolophium*, *Urbanosciadium*, after Ignaz Urban (1848–1931); *Bouchea* and *Ubochea*, after C. D. Bouché (1809–81); *Gerardia* and *Graderia*, after John Gerard (1545–1607); *Martia* and *Martiusia*, after K. F. P. von Martius (1794–1868).

'To name one good genus after a man as the ancients did for the Kings Gentius and Eupator, or as later authors have done for Cesalpino, Columna, Ray, Tournefort, Linnaeus, and then stop, *that* is to really honor a man, while to use his name as a merely convenient foundation for the making of a dozen different names', wrote E. L. Greene in 1906, 'is not that to openly dishonor him?' Engler certainly did not think so.

#### INGENIOUS METHODS OF NAME FORMATION

Ingenious ways of making generic names from personal names have been devised by various botanists, notably by Otto Kuntze in 1891.

He used the termination *-ago* from *agere* (to move, perform, achieve, etc.) to commemorate industrious compilers of botanical catalogues, nomenclators, etc., e.g. *Jacksonago*, *Justago*, *Koehneago*, *Pfeifferago*, *Pritzelago*, *Richterago*, *Steudelago*. Botanists who worked on the flora of India and the East Indies received the termination *-inda*, e.g. *Beccarinda*, *Clarkeinda*, *Hasskarlinda*, *Kurzinda*, *Ridleyinda*; those concerned with the African flora the termination *-afra*, e.g. *Bolusafra*, *Schinzafra*, *Schweinfurthafra*; those concerned with the American flora the termination *-amra*, e.g. *Brittonamra*, *Ernstamra*, *Kurzamra*, *Watsonamra*; those concerned with the Asiatic flora the termination *-asia*, e.g. *Itoasia*, *Maximowasia*. For his services to plant anatomy Radlkofefer was awarded the generic name *Radlkofeferotoma*! Other nomenclatorial curiosities of Kuntze's making are his *Algogrunowia* and *Algorichtera* commemorating the algologists A. Grunow and P. Richter, *Sirhookera* commemorating Sir Joseph D. Hooker and *Sirmuellera* commemorating Baron Ferdinand von Mueller, *Absolmsia* commemorating Count H. M. C. F. Friedrich zu Solms Laubach and *Aregelia* commemorating E. von Regel, *a* and *ab* being equivalents of the honorific *von* and *zu*, and *Benthamicella* renaming Bentham's *Stellularia*.

Making generic names by compounding a forename (baptismal name) and surname or two parts of a surname is exemplified by Kuntze's *Allenrolfea* commemorating Allen Rolfe, *Albertokuntzea* commemorating Albert Kuntze, *Jamesbrittenia* commemorating James Britten, Beccari's *Petrosavia* commemorating Pietro Savi, O. F. Cook's *Rystonea* commemorating Roy Stone, Dandy's *Elmerrillia* commemorating Elmer D. Merrill and Marquand's *Kingdon-wardia* commemorating F. Kingdon Ward, to whom the genera *Kingdonia* and *Wardaster* are also dedicated. Linnaeus, with his *Rajania* (Plumier's *Jan-Raja*) commemorating John Ray, and the Spanish botanists Ruiz and Pavón, with their *Isidrogalvia* commemorating Isidro Gálvez, *Mecardonia* commemorating Antonio Meca y Cardonia and *Nunnezharia* commemorating Alonso Núñez de Haro, had given him welcome precedent. Ruiz and Pavón also introduced generic names commemorating two persons simultaneously, as *Juanulloa* in honour of Jorge Juan and Antonio Ulloa, joint authors of *Relación histórica del Viaje a la América meridional* (1748), and *Carludovica* in honour of King Carlos IV of Spain and his queen Maria Luisa. A later example is *Brittonrosea* commemorating the two authors of *The Cactaceae* (1919–23).

For treating initial letters as part of names, as in Kuntze's *Pasacardoa* after Pier Andrea Saccardo and *Nebrownia* after Nicholas Edward Brown, he had precedent in Fries's *Acurtisia* after A. Curtis and Steudel's *Ifdregea* after I. F. Drege. The generic names *Afgekia* in

honour of A. F. G. Kerr and *Resia* in honour of Richard Evan Schultes and the epithet in *Rosa ecae* commemorating E. C. Aitchison are extreme examples of this method used by other authors.

The names *Aschersonia*, *Boecklera*, *Cogniauxia* and *Goepertia* having been twice (*bis*) used, Kuntze replaced the later homonyms by *Bisaschersonia*, *Bisboecklera*, *Biscogniauxia* and *Bisgoeppertia*. More often the prefix *neo-* (new) is used, e.g. *Stapfia* and *Neostapfia*, *Marica* and *Neomarica*, to make such a distinction. When a person is particularly associated with one area, geographical prefixes have sometimes been considered appropriate, e.g. *Wilsonia* and *Sinowilsonia*, *Jackia* and *Sinojackia*.

#### EPITHETS COMMEMORATING PERSONS

Epithets whether specific or infraspecific may be substantival or adjectival. When they are simply nouns in apposition, as in *Rosa rubus*, *Sedum rosea* and *Schinus molle*, they merely follow the generic name, being linked to it not grammatically but by position alone. The name of a person used as an epithet is either put in the genitive case, i.e. given a Latin genitive ending, as in *Rosa farreri*, *R. henryi*, *R. hugonis*, *R. moyesii*, *R. pratii*, *R. murielae*, *R. willmottiae*, or converted into an adjective agreeing in gender with the generic name, as in *Rosa aschersoniana*, *R. forrestiana*, *R. wichuraiana*. Attempts have been made without success to differentiate the application of these adjectival and substantival epithets. Thus John Lindley wrote in 1832: 'If the individual is the discoverer of the plant, or the describer of it, the specific name [i.e. epithet] is then to be in the genitive singular; as *Caprifolium Douglasii*, *Carex Menziesii*; Messrs. Douglas and Menzies having been the discoverers of these species; and *Planera Richardi*, the species so called having been described by Richard: but if the name is merely given in compliment, without reference to either of these circumstances, the name should be rendered in an adjective form, with the termination *anus*, *a*, *um*; as in *Pinus Lambertiana*, in compliment to Mr. Lambert.' Adopted then, this might have made a useful distinction. Apparently, most of those who then and thereafter named new species paid no attention whatever to it; probably they never knew such a distinction had been proposed. However, at the last moment the 1867 Botanical Congress accepted the inclusion in the *Laws of botanical Nomenclature*, drawn up by Alphonse de Candolle, of an article (no. 33) stating that 'names of persons used as specific epithets have a genitive or an adjective form (*Clusii* or *Clusiana*). The first is used when the species has been described or distinguished by the botanist whose name it takes; in other cases the second form is

preferred.' Ascherson protested against this rule in 1868. Most botanists continued to disregard it, and in 1883 Alphonse de Candolle declared that 'l'article est tenu pour nul'. Thus, for example, *Rosa willmottiae*, *Paeonia willmottiae*, *Corylopsis willmottiae* and *Ceratostigma willmottianum* commemorate Ellen Ann Willmott who collected and described none of them; *Chrysosplenium davidianum*, *Celtis davidiana*, *Ampelopsis davidiana*, *Acer davidii* and *Clematis armandii* commemorate Armand David who collected all of them.

*The International Code of botanical Nomenclature* recommends that when a new specific or infraspecific epithet is taken from the name of a man it should be formed in the following manner:

- (a) When the name of the person ends in a vowel, the letter *i* is added (thus *glazioui* from *Glaziou*, *bureaui* from *Bureau*), except when the name ends in *a*, when *e* is added (thus *balansae* from *Balansa*).
- (b) When the name ends in a consonant, the letters *ii* are added (thus *ramondii* from *Ramond*), except when the name ends in *-er*, when *i* is added (thus *kernerii* from *Kerner*).
- (c) The syllables not modified by these endings retain their original spelling, unless they contain letters foreign to Latin plant names or diacritic signs; these signs must be suppressed and the letters transcribed, e.g. *ä*, *ö*, *ü* becoming *ae*, *oe*, *ue* respectively, *ø* becoming *oe* and *å* becoming *ao*.
- (d) When epithets taken from the name of a man have an adjectival form they are formed in a similar way, e.g. *Geranium robertianum*, *Tulipa gesneriana*, *Asarum hayatanum*.
- (e) The Scottish and Irish patronymic prefix 'Mac,' 'Mc' or 'M', meaning 'son of', should be spelled 'mac' and united with the rest of the name, e.g. *macfadyenii* after Macfadyen, *macgillivrayi* after MacGillivray, *macnabii* after McNab, *mackenii* after M'Ken.
- (f) The Irish patronymic prefix 'O' should be united with the rest of the name or omitted, e.g. *obrienii*, *brienianus* after O'Brien, *okellyi* after O'Kelly.
- (g) A prefix consisting of an article, e.g. *le*, *la*, *l'*, *les*, *el*, *il*, *lo*, or containing an article, e.g. *du*, *dela*, *des*, *del*, *della*, should be united to the name, e.g. *leclercii* after Le Clerc, *dubyssonii* after DuBuysson, *lafarinae* after La Farina, *logatoi* after Lo Gato.
- (h) A prefix to a surname indicating ennoblement or canonization should be omitted, e.g. *candollei* after De Candolle, *jussieui* after de Jussieu, *hilairei* after Sainte-Hilaire, *remyi* after St. Rémy; in geographical epithets, however, 'St.' is rendered as *sanctus* (m.) or *sancta* (f.) e.g. *sancti-johannis*, of St. John, *sanctae-helenae*, of St. Helena.

(i) A German or Dutch prefix when it is normally treated as part of the family name, as often happens outside its country of origin, e.g. in the United States, may be included in the epithet, e.g. *vonhausenii* after Vonhausen, *vanderhoekii* after Vanderhoek, *vanbruntiae* after Mrs. Van Brunt, but should otherwise be omitted, e.g. *iheringii* after von Ihering, *martii* after von Martius, *steenisisii* after van Steenis, *strassenii* after zu Strassen, *vechtii* after van der Vecht.

If a personal name is already Latin or Greek, the appropriate Latin genitive should be used, e.g. *alexandri* from Alexander, *francisci* from Franciscus, *augusti* from Augustus, *linnaei* from Linnaeus, *hectoris* from Hector.

The same provisions apply to epithets formed from the names of women. When these have a substantival form, they are given a feminine termination, e.g. *Cypripedium hookerae*, *Rosa beatricis*, *Scabiosa olgae*, *Omphalodes luciliae*.

Recommendations *e-i* above were adapted from the *International Code of Zoological Nomenclature* (1961).

#### ANAGRAMS

When no fitting and meaningful name for a new genus comes to mind, one that is at least euphonious and not over-long can be devised, as a last resort, by rearranging the letters of the name of a closely related genus. Such anagrams are meaningless, but equally so are many plant-names of great antiquity used by the Greeks and Romans. John Lindley accordingly wrote long ago: 'So impossible is it to construct generic names that will express the peculiarities of the species they represent, that I agree with those who think a good, well-sounding, *unmeaning* name as good as any that can be contrived. The great rule to follow is this: In constructing a generic name, take care that it is harmonious, and as unlike all other generic names as it can be' (*Introd. Bot.*, 3rd ed., 531; 1839). The first anagrammatic generic name in botanical literature appears to be Linnaeus's *Mahernia* (*Mant. Pl.*, 9; 1767) made from *Hermannia* with omission of an *n*. Generic names which are anagrams have been used in most families. Thus *Alchemilla* (Rosaceae) has been transformed into *Lachemilla*; *Allium* (Amaryllidaceae) into *Milula* and *Muilla*; *Arabis* (Cruciferae) into *Sibara*; *Ardisia* (Myrsinaceae) into *Sadaria*; *Argemone* (Papaveraceae) into

*Enomegra*; *Aristida* (Gramineae) into *Sartidia*; *Ascyron* (Hypericaceae) into *Norysca* and *Roscyna*; *Bouchea* (Verbenaceae) into *Ubochea*; *Cydonia* (Rosaceae) into *Docynia*; *Elvasia* (Ochnaceae) into *Vaselia*; *Elymus* (Gramineae) into *Leymus*; *Filago* (Compositae) into *Gifola*, *Ifloga*, *Lifago*, *Logfia*, *Oglifa*; *Goldfussia* (Acanthaceae) into *Disflugossia*; *Hariota* (Cactaceae) into *Hatiora*; *Liatris* (Compositae) into *Litrisa* and *Trilisa*; *Mitella* (Saxifragaceae) into *Tellima*; *Monardella* (Labiatae) into *Madronella*; *Myginda* (Celastraceae) into *Gyminda*; *Pandorea* (Bignoniaceae) into *Podranea*; *Sauvagesia* (Ochnaceae) into *Vausagesia*; *Tacazzea* (Asclepiadaceae) into *Zacateza*; *Tephrosia* (Leguminosae) into *Ophrestia*. In the name *Magnolia* sect. *Maingola* the anagrammatic sectional epithet *Maingola* has meaning in that *Magnolia maingayi* is the type of the section. The name *Phlebiogonium* retains the meaning of *Goniophlebium*. A few generic names have been formed from anagrams of geographical names, e.g. *Jacaima* (Asclepiadaceae) from Jamaica, *Lobivia* (Cactaceae) from Bolivia. For other examples, see Smith & Stearn (1972: 5)

#### GEOGRAPHICAL AND ECOLOGICAL EPITHETS

Epithets referring to places of origin and distribution are dealt with in Chapter XVII, those referring to habitats in Chapter XVI.

#### LATINIZATION OF NATIVE NAMES

Linnaeus, as noted above (p. 255), ruled that generic names not derived from Greek or Latin were to be rejected, which saved botany from being burdened with the uncouth transcriptions of Indian plant-names given in Rheede's *Hortus Indicus Malabaricus* (1678–1703). His real objection was seemingly not to their origin, but to their form; he liked short euphonious names and himself adopted such 'barbarous' names as *Alchemilla*, *Areca*, *Berberis*, *Coffea*, *Datura*, *Mammea*, *Tulipa* and *Yucca*. In fact many plant-names used by the Greeks and the Romans, among them *Anemone*, *Crocus*, *Hyssopus* and *Rosa*, were of oriental origin; probably others came from 'a little-known linguistic stratum which, for lack of a more precise name has been called "Mediterranean"'. There is no reason whatever against the use of native plant-names as scientific generic names provided that they are fairly short, euphonious and of Latin form or made so. Thus *Aucuba*, *Kirengeshoma*, *Nandina* and *Sasa* are of Japanese origin, *Ailanthus* and *Angraecum* of Malaysian origin, *Madhuca*, *Manilkara* and *Vanda* of Indian origin, *Nelumbo* and *Wissadula* of Singhalese origin, *Alchemilla*, *Coffea* and *Taraxacum* of Arabic origin, *Jasminum* of Persian origin,

*Poncirus* of French origin, *Rorippa* of German origin, *Mammea* and *Zombia* of West Indian origin, *Camassia* of North American Indian origin, and so on.

#### NAMES OF INTERGENERIC HYBRID GROUPS

The name of a bigeneric hybrid group corresponding to a genus (i.e. a group resulting from hybridization between members of two genera) is formed by combining the names of the two parent genera (i.e. joining the first part or the whole of one name and the last part or the whole of the other) into a single word not exceeding eight syllables, which is regarded as a condensed formula, e.g.  $\times$  *Adaglossum* (= *Ada*  $\times$  *Odontoglossum*),  $\times$  *Dialaelia* (= *Diacrium*  $\times$  *Laelia*),  $\times$  *Heucherella* (= *Heuchera*  $\times$  *Tiarella*),  $\times$  *Mahoberberis* (= *Berberis*  $\times$  *Mahonia*).

This method of designating bigeneric hybrid groups by name-blending was introduced by Maxwell T. Masters in 1872 (*Gard. Chron.* 1872: 358) when he coined the name  $\times$  *Philageria veitchii* for the hybrid between *Lapageria rosea* and *Philesia magellanica* raised by Messrs. Veitch. Early in the twentieth century orchid-raisers extended its use from bigeneric hybrid groups such as  $\times$  *Brassocattleya* (= *Brassavola*  $\times$  *Cattleya*) and trigeneric groups such as  $\times$  *Brassocattaelia* (= *Brassavola*  $\times$  *Cattleya*  $\times$  *Laelia*) to multigeneric groups such as  $\times$  *Sophrolaeliacattleya* (= *Cattleya*  $\times$  *Laelia*  $\times$  *Sophronitis*). The probability of even more unwieldy designations led E. A. Bowles (cf. Stearn, 1961: 38) to suggest an alternative method, namely, to abandon all attempts to make combinations of the names of three or more genera and instead to form arbitrary equivalent names by attaching the termination *-ara* to the name of a person. This proposal made at the Brussels Botanical Congress of 1910 was officially accepted at the Stockholm Botanical Congress of 1950.

The name of a multigeneric hybrid group (i.e. one derived from four or more genera) is formed from the name of a person eminent as a collector, grower or student of these plants to which is added the termination *-ara*, e.g.  $\times$  *Burrageara* (= *Cochlioda*  $\times$  *Miltonia*  $\times$  *Odontoglossum*  $\times$  *Oncidium*) in honour of the Massachusetts horticulturist and geologist Albert C. Burrage (1859–1931). Such a name is regarded as equivalent to a condensed formula.

The name of a trigeneric hybrid group (i.e. one derived from three genera) is formed either like that of a bigeneric hybrid group, by combining the names of the three parent genera into a single word not exceeding eight syllables, or like that of a multigeneric hybrid group, by adding the termination *-ara* to a personal name. Examples are

$\times$  *Diacatelaelia* (= *Cattleya*  $\times$  *Diacrium*  $\times$  *Laelia*) and  $\times$  *Rolfeara* (= *Brassavola*  $\times$  *Cattleya*  $\times$  *Sophronitis*), commemorating the Kew botanist Robert Allen Rolfe (1855–1921).

Names of bigeneric graft-hybrids are similarly formed, e.g.  $+$  *Laburnocytisus* (= *Cytisus*  $+$  *Laburnum*). Different names must be applied to graft-hybrids and sexual hybrids derived from the same genera, e.g.  $\times$  *Crataemespilus* (*Crataegus*  $\times$  *Mespilus*) and  $+$  *Crataegomespilus* (*Crataegus*  $+$  *Mespilus*)

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## CHAPTER XXI

## Prefixes and Suffixes

Prefixes, p. 301—Latin prefixes, p. 302—Greek prefixes, p. 304—Suffixes, p. 305—Latin substantival suffixes, p. 305—Greek substantival suffixes, p. 306—Latin adverbial suffixes, p. 307—Latin adjectival suffixes, p. 307—Greek adjectival suffixes, p. 310—References, p. 310.

An affix is one letter or several letters placed at the beginning of a word, and then termed a *prefix*, or at the end of a word, and then termed a *suffix*, to modify its meaning or application or make it distinct from other words. These elements play an important part in the formation of words in botanical Latin.

## PREFIXES

Prefixes can be attached to both nouns and adjectives. Many Latin prefixes, e.g. *ad* (to), *circum* (around), *in* (in), *semper* (always), *sub* (under), are prepositions or adverbs having independent use; these are called **SEPARABLE PREFIXES**. Adjectives with a modified ending, i.e. consisting of the stem and often a connecting vowel, in botanical Latin may also serve as prefixes, e.g. *hetero-* (different), *neo-* (new), *novi-* (new), *pari-* (equal), *pseudo-* (false). Others, e.g. *ambi-* (around), *dis-* (apart), *re-* (back, again), *se-* (apart), exist only as part of compounds and are called **INSEPARABLE PREFIXES**. In general, Latin prefixes should be added only to words of Latin origin and Greek prefixes to those of Greek origin. Latin *e-*, *ex-* (without) corresponds to Greek *a-*, *an-*; Latin *contra-* (against) to Greek *anti-*, *anti-*; Latin *circum-* (around) to Greek *peri-*; Latin *super-*, *supra-* to Greek *hyper-*; and so on. Certain words, e.g. *calyx*, *sepulum*, *petalum*, can be treated as both Latin and Greek, and the Greek *neo-* (new) and *pseudo-* (false) are commonly prefixed to words which are neither Greek nor Latin in origin, e.g. *neoguineensis* (pertaining to New Guinea), *Neojunguhnia*, *pseudomoluccanus* (false *moluccanus*), *Pseudopringsheimia*.

When a prefix ends in a consonant and is placed before a word beginning with a consonant, e.g. *ad* before *similis*, the final consonant of the prefix may be changed to that of the word itself, hence *assimilis*,

or to another consonant easier to say in combination ; this process is known as ASSIMILATION. Thus *d* usually, but not invariably, becomes *b*, *f*, *g*, *l*, *n*, *m*, *p*, *r*, *s* or *t* when placed before a word beginning with these consonants, e.g. *affinis* (bordering, related) from *ad-* and *finis* ; thus there may exist alternative forms as *adpressus* and *appressus*, *adligans* and *alligans*. In Greek the final *n* of *syn-* (together) becomes *l* or *r* when placed before these consonants, e.g. *sylloge* from *syn-* and *logē*. The letter *n* before *b* and *p* becomes *m*, e.g. *compositus* from *con-* and *positus* ; before *l* the letter *n* usually becomes *l*, e.g. *collimitaneus* (bordering upon) from *con-* and *limitaneus*. The Latin prefixes which usually assimilate to the following word in this manner are *ad-*, *con-*, *dis-*, *in-*, *ob-* and *sub-*. The Latin prefixes ending in a vowel, e.g. *antero-*, *contra-*, *de-*, *extra-*, *infra-*, *intra-*, *intro-*, *pre-*, *re-*, *retro-*, *semi-*, *supra-* and *ultra-*, as also the Greek prefixes *amphi-* and *peri-*, retain this vowel even when the following word begins with a vowel, e.g. *extraordinarius*, *perianthium*. The Greek prefixes ending in *-a*, e.g. *ana-*, *meta-*, *para-*, and some ending in *-i* and *-ō* (omicron), e.g. *anti*, *epi*, *apo*, *ecto*, *endo*, drop this vowel when they come before a word beginning with a vowel, e.g. *Pararistolochia*.

Many prefixes indicate a relation in space or time or else a degree of development or negation.

#### LATIN PREFIXES

*a-*, (before a consonant), *ab-* (before a consonant or vowel), *abs-* (before *c* or *t*) : away from, e.g. *abaxialis*, away from the axis ; corresponds to Greek *apo-*.  
*ad-*, *ac-* (before *c*), *af-* (before *f*), *ag-* (before *g*), *al-* (before *l*), *an-* (before *n*), *ap-* (before *p*), *ar-* (before *r*), *as-* (before *s*), *at-* (before *t*) : towards, to, near, e.g. *appendix*, something which hangs on.  
*ai-* : see under *semper*.  
*amb-*, *ambi-* : around, round about.  
*ana-* : see under *re-*.  
*ante-* : before, e.g. *antecedens*, going before, preceding.  
*anti-* : see under *contra*.  
*apo-* : see under *a-*, *de-*.  
*cata-* : see under *de-*.  
*circum-* : around, e.g. *circumdans*, surrounding, *circumferentia*, circumference ; corresponds to Greek *peri-*.  
*co-* (before vowels and *h*), *col-* (before *l*), *com-* (before *b*, *m* and *p*), *con-* (before *c*, *d*, *f*, *g*, *j*, *n*, *qu*, *s*, *t* and *v*), *cor-* (before *r*) : with, together with, e.g. *coalitus*, grown together, *collectus*, gathered together, *compositus*, put together, *concordia*, agreeing together, *corrasus*, scraped together ; corresponds to Greek *syn-*.  
*contra-*, *contro-* : against, e.g. *controversus*, turned against ; corresponds to Greek *anti-*.

*de-* : downwards, outwards, from, e.g. *descendens*, sinking down, descending ; corresponds to Greek *apo-*, *cata-*.  
*di-* (before some consonants), *dis-* : between, away from, e.g. *dissepimentum*, partition, *dissimilis*, unlike.  
*dia-* : see under *pel-*.  
*e-* (before *s* and *d*), *ef-* (before *f*), *ex-* : without, not, lacking, from out, e.g. *edentatus*, toothless, *effusus*, poured out, *exsertus*, thrust out, projecting.  
*en-* : see under *il-*.  
*endo-* : see under *intra*.  
*exo-* : see under *extra*.  
*extra-* : on the outside, beyond, over and above, e.g. *extraordinarius*, out of the common order ; corresponds to Greek *exo-*.  
*hemi-* : see under *semi*.  
*hyper-* : see under *super*.  
*hypo-* : see under *infra*, *sub*.  
*il-* (before *l*), *im-* (before *b*, *p*, *m*), *in-* (before vowels and most consonants), *ir-* (before *r*) : in, into, for, contrary, e.g. *illegitimus*, unlawful, *immersus*, plunged into, *ineptus*, unsuitable, *insertus*, put into ; corresponds to Greek *en-*.  
*infra-* : below, e.g. *infranodis*, below a node ; corresponds to Greek *hypo*.  
*inter-* : between, e.g. *interjectus*, thrown between, *internodium*, internode, *intervallum*, interval.  
*intra-* : within, e.g. *intra-axillaris*, within the axil ; corresponds to Greek *endo*.  
*intro-* : inside, e.g. *introvenius*, with veins hidden inside the parenchyma.  
*meta-* : see under *post*.  
*non-* : not, e.g. *nonscriptus*, not written upon, without markings.  
*ob-* (before vowels and most consonants), *oc-* (before *c*), *of-* (before *f*), *op-* (before *p*) : against, contrary, for, e.g. *obovatus*, obovate.  
*pel-* (before *l*), *per-* : through, extra, very, e.g. *pellucidus*, transparent, *perforatus*, pierced through, *perelegans*, very elegant ; partly corresponds to Greek *dia*.  
*peri-* : see under *circum*.  
*post-* : after, behind, later, e.g. *postmeridianus*, after midday ; corresponds to Greek *meta*.  
*prae-* : before, in front, very, e.g. *praestans*, pre-eminent ; partly corresponds to Greek *pro*.  
*pro-* : for, instead of.  
*pro-* : see under *prae*.  
*re-* : back, against, again, e.g. *resupinatus*, bent back, upside down ; corresponds to Greek *ana*.  
*retro-* : back, behind, e.g. *retrocurvus*, curved back.  
*se-* : out, without, apart, e.g. *segregatus*, kept apart.  
*semi-* : half, e.g. *semicircularis*, semi-circular ; corresponds to Greek *hemi*.  
*semper-* : always, e.g. *sempervirens*, evergreen ; corresponds to Greek *ai*.  
*sub-* (before vowels and most consonants), *suc-* (before *c*), *suf-* (before *f*), *sug-* (before *g*) : below, under, almost, approaching, e.g. *subacaulis*,

almost stemless, *submersus*, growing under water; corresponds to Greek *hypo-*.

**super-**: above, e.g. *superpositus*, placed above; corresponds to Greek *hyper-*.

**supra-**: above, over, e.g. *supracanus*, grey above, *supranodis*, above a node; corresponds to Greek *hyper-*.

**syn-**: see under **co-**.

**trans-**: beyond, through, across, e.g. *transalpinus*, beyond the Alps, *transportatus*, carried across.

#### GREEK PREFIXES

**a-** (before a consonant), **an-** (before a vowel): not, without, less, e.g. *achromus*, without colour, colourless, *anantherus*, without anthers.

**ai-**: always.

**amphi-**, **ampho-**: on both sides, around, both, double, e.g. *amphicarpus*, with two kinds of fruit.

**ana-**, **ano-**: upon, up, upwards, above.

**anti-** (before vowels and *h*), **anti-** (before a consonant): against, opposite to, e.g. *antipetalus*, opposite to (not alternate with) petals.

**ap-** (before a vowel and *h*), **apo-**: from, away, down, downwards.

**arche-**: original, primitive.

**archi-**: chief.

**cat-** (before vowels and *h*), **cata-**: against, along, below.

**cato-**: down, downwards, below, under.

**chori-**: separate, apart, e.g. *choripetalus*, with free petals.

**dia-**: through, across.

**dicha-**, **dicho-**: in two, e.g. *dichotomus*, forked, divided in pairs.

**dys-**: bad, ill, difficult.

**ect-** (before vowels), **ecto-**: on the outside, outwards.

**em-** (before *b* and *p*), **en-**: in, within.

**endo-**, **ento-**: inside, inwards.

**ep-** (before vowels and *h*), **epi-**: upon, on, over.

**eu-**: good, well.

**hama-**: together with.

**hemi-**: half.

**hyper-**: above, over.

**hypo-**: below, under.

**met-** (before vowels), **meta-**: next to, among, after.

**opistho-**: back, behind.

**para-**: beside, alongside, close by.

**peri-**: around.

**pro-**: in front of, before.

**pros-**: near, in addition.

**proso-**, **prostho-**: forward, to the front, before.

**sy-** (before *s*), **syl-** (before *l*), **sym-** (before *b* and *p*), **syn-**, **syr-** (before *r*), **sys-** (before *s*): together, with, joined.

**za-**: much.

#### SUFFIXES

By the use of suffixes a diversity of words may be formed from one word. The suffix determines the meaning, gender and grammatical nature of the compound. Thus the Latin word for 'iron' is *ferrum*, a neuter noun, with the stem *ferr-*. The adjectival ending *-eus* gives the adjective *ferreus* (made of iron). The substantival ending *-ugo*, sometimes indicating a disease, gives the feminine noun *ferrugo* (iron rust); from this, by use of the adjectival ending *-ineus*, is derived the adjective *ferrugineus* (rust-coloured), from which in turn, by use of the participal ending *-escens*, has been coined the adjective *ferruginescens* (becoming rust-coloured, somewhat rust-coloured). Similarly from the masculine noun *flos* (flower), with the stem *flor-*, have come the adjectives *floreus* (made of flowers), *floridus* (flowery) and *floribundus* (full of flowers), the verb *floreo* (flower, flourish) and the masculine diminutive *flosculus* (flowerlet, floret), as well as such compounds as *florifer* and *floriger* (bearing flowers), *florilegium* (a gathering of flowers, hence an illustrated flower book). Latin has numerous suffixes. These are not, however, used indiscriminately. A given suffix usually conveys a limited range of meaning (cf. Leumann, 1944) and is associated with a particular kind of stem to give a word which, according to the suffix, may be an adjective, a verb, an adverb or a noun and then of a particular gender. Latin suffixes should be associated with Latin stems and Greek suffixes with Greek stems, although botanical authors have occasionally done otherwise.

The numerals I-V below indicate the declension of nouns formed by these suffixes.

#### LATIN SUBSTANTIVAL SUFFIXES

**-aculum** (n. II): indicates an instrument or means; verb base; e.g. *retinaculum*, hold fast, tether (from *retinere*, to hold back, retain).

**-ago** (f. III): indicates resemblance or connexion; noun base; e.g. *plumbago*, kind of lead (from *plumbum*, lead). According to Ernout (1941) the ending *-go* originally indicated a force doing something, as in *vertigo*, then a change of state or a state or tendency or malady, e.g. *robigo* (state of being red, tendency to become red, hence iron-rust), *aerugo* (rust of copper), and thus it became a word-forming element to indicate possession of a property, e.g. *lactago* (herb with milky juice), or resemblance, e.g. *ferulago* (inferior or lesser kind of *ferula*), *cunilago* (a kind of *cunila*).

**-arium** (n. II): indicates a place where something is done or a container; e.g. *herbarium*, collection of dried plants (from *herba*, herb), *ovarium*, ovary (from *ovum*, egg).

**-aster** (m. II), **-astra** (f. I), **-astrum** (n. II); indicates inferiority or incomplete resemblance, hence often applied to the wild equivalent of a

cultivated plant; noun base; e.g. *oleaster*, the wild olive (from *olea*, olive); cf. Seck & Schnorr (1884).

**-bulum** (n. II), **-bula** (f. I): indicates an instrument or means; verb base; e.g. *involucrum*, wrapper, involucre (from *involvere*, wrap up, envelop).

**-cellus** (m. II), **-cella** (f. I), **-cellum** (n. II); **-cillus** (m. II), **-cilla** (f. I), **-cillum** (n. II); **-culus** (m. II), **-cula** (f. I), **-culum** (n. II); **-illus** (m. II), **-illa** (f. I), **-illum** (n. II): diminutive; e.g. *cuticula*, cuticle (from *cutis*, skin), *lamella*, small plate, gill (from *lamina*, plate, blade), *pedicellus*, pedicel (from *pes*, foot). The suffixes **-ulus**, etc., **-ellus**, etc., and **-illus**, etc., form compounds with nouns of the First Declension, **-ulus**, etc., with those of the Third and Fourth Declensions, **-cellus**, etc., and **-cillus**, etc., with any declension.

**-etum** (n. II): indicates collective place of growth, hence plant association; noun base; e.g. *quercetum*, oak-wood (from *quercus*, oak); cf. Mayer (1954).

**-ies** (f. V): indicates a thing formed; verb base; e.g. *series*, row (from *serere*, to put in a row).

**-io** (f. III): indicates the abstract or general result of an action; verb base; e.g. *collectio*, a collecting together (from *colligere*, to gather together).

**-itas** (f. III), **-itia** (f. I), **-ties** (f. III), **-itudo** (f. III): indicates a concept or quality: adjectival or participial base; e.g. *affinitas*, relationship (from *affinis*, bordering), *duritia*, hardness (from *durus*, hard), *longitudo*, length (from *longus*, long), *crassities*, thickness (from *crassus*, thick).

**-orium** (m. II): indicates place of work or action; verb base; e.g. *laboratorium*, laboratory (from *laborare*, to work, from *labor*, toil).

**-ugo** (f. III): indicates a substance or property possessed; noun or adjective base; e.g. *asperugo* a prickly plant (from *asper*, rough), *lanugo*, down (from *lana*, wool); cf. **-ago** above, p. 305.

**-illus** (m. II), **-ula** (f. I), **-ulum** (n. II): diminutive; noun base of First or Second declension nouns; e.g. *capsula*, a small box, capsule (from *capsa*, box).

**-ura** (f. I): indicates the result of an action; verb base; e.g. *incisura*, incision (from *incidere*, to cut into).

## GREEK SUBSTANTIVAL SUFFIXES

**-ias** (m. I): indicates a close connexion; noun base; e.g. *Asclepias*.

**-cles** (m. III): indicates honour or renown, hence abundance of a particular quality, often part of Greek personal names; noun or adjectival base.

**-ides** (f. III): indicates resemblance; noun base.

**-idium** (n. II): diminutive; noun base; e.g. *ascidium* (from *ascos*, sack).

**-ion** (n. II): indicates occurrence; noun base.

**-is** (f. III): indicates a close connexion; noun base.

**-iscus** (m. II): diminutive; noun base; e.g. *Asteriscus* (from *aster*, star).

**-ites** (m. I), **-itis** (m. III): indicates a close connexion; noun base.

**-ium** (n. II): diminutive; noun base; e.g. *Aspidium*, a little shield (from *aspis*, shield).

**-ma** (n. III): often indicates the result of an action; verb base.

**-mus** (m. II): indicates an action; verb base.

**-osyne** (f. II), **-otes** (f. III): forms abstract nouns indicating a special feature; adjectival base; e.g. *Leptosyne*, *Leptotes* (from *leptos*, slender, fine).

**-sis** (f. III): indicates an action of a general or abstract nature; verb base; e.g. *diagnosis*, diagnosis (from *diagnoscere*, to know apart).

**-ter** (m. III), **-tes** (m. I), **-tis** (m. III), **-tor** (m. III); **-tria** (f. I): usually indicates the agent or means; verb base.

**-tros** (m. II) or **-trus** (m. II), **-tra** (f. I), **-tron** (n. II) or **-trum** (n. II): indicates a tool or means of doing something; verb or noun base.

## LATIN ADVERBIAL SUFFIXES

Latin adverbs possess a variety of endings corresponding to the English '-ly' in meaning. Those formed from adjectives ending in **-er** or **-us** usually end in **-o** or **-e** but may end in **-iter** or **-enter**, e.g. *crebro*, closely, repeatedly, *crebre*, closely, compactly, *crebriter*, repeatedly (all from *creber*, thick, close, repeated). These variants sometimes have different shades of meaning; similarly the adjective *rarus* (far apart, scattered) has given the adverbs *raro*, *rare*, *rarenter*, *rariter*. According to Osthoff (1887), the ending **-iter** originated from the fusion of *iter* (way) with a preceding adjective, e.g. *breviter*, briefly (from *brevis*, short, *iter*, a way). Adjectives ending in **-is** or **-ns** usually have adverbs ending in **-ter** or **-er**, e.g. *fortiter*, strongly (from *fortis*, strong), *frequenter*, frequently (from *frequens*, often, frequent), but may also end in **-e**, e.g. *difficile*, *difficulter* and *difficiliter* (from *difficilis*, difficult). Adverbs formed from nouns or from past participles of verbs or from adjectives ending in **-atus** frequently end in **-atim**, e.g. *pinnatim*, pinnately (from *pinnatus*, pinnate, from *pinna* or *penna*, feather), *radiatim*, radiately (from *radiatus*, rayed, from *radius*, spoke, ray). A few end in **-am** or **-ies**, e.g. *bifariam*, on two sides, twofold, *bifaries*, twofold.

For further examples see Chapter VII, p. 104.

## LATIN ADJECTIVAL SUFFIXES

**-abilis** **-is** **-e**: see below under **-bilis**.

**-aceus** **-a** **-um**: indicates resemblance; noun base; e.g. *coriaceus*, leathery (from *corium*, leather), *rosaceus*, rose-like (from *rosa*, rose).

**-alis** **-is** **-e**: belonging or pertaining to; noun base; e.g. *dorsalis*, dorsal (from *dorsum*, back), *autumnalis*, autumnal (from *autumnus*, autumn).

**-aneus** **-a** **-um**: indicates resemblance or material out of which something is made; noun base; e.g. *cutaneus*, relating to the skin (from *cutis*, skin).

**-anus** **-a** **-um**: indicates position, connexion or possession by; noun base; e.g. *africanus*, African (from *Africa*), *montanus*, relating to mountains (from *mons*, mountain), *clusianus*, belonging to Clusius (from Charles de l'Écluse).

**-aris -is -e**: a variant of *-alis* used after stems ending in *l*; e.g. *stellaris*, starry (from *stella*, star), *avicularis*, relating to small birds (from *avicula*, diminutive of *avis*, bird).

**-arius -a -um**: indicates connexion or possession; noun or numeral base; e.g. *arenarius*, pertaining to sand (from *arena*, sand), *primarius*, chief (from *primus*, the first).

**-ascens**: indicates process of becoming, hence incomplete manifestation; noun or adjectival base; e.g. *purpurascens*, becoming purple, purplish (from *purpureus*, purple).

**-aticus -a -um**: indicates place of growth; noun base; e.g. *sylvaticus*, belonging to woods (from *silva*, wood).

**-atilis -is -e**: indicates place of growth; noun base; e.g. *saxatilis*, dwelling among rocks (from *saxum*, rock).

**-atus -a -um**: (1) indicates possession or likeness; noun base; e.g. *capitatus*, with a head (from *caput*, head), *ovatus*, egg-shaped (from *ovum*, egg); (2) perfect participle ending of verbs of First Conjugation, indicating an action made or done; e.g. *fucatus*, coloured (from *fucare*, to colour).

**-ax**: uncommon ending with sense of 'inclining to and apt to'; verb base; e.g. *tenax*, gripping, tenacious, tough (from *tenere*, to hold); *fugax*, apt to flee, fleeting, withering or falling quickly (from *fugere*, to flee).

**-ibilis -is -e**: indicates capacity or ability; verb base; it becomes *-abilis* with verbs having the infinitive in *-are* and *-ibilis* with those in *-ere* and *-ire*; e.g. *variabilis*, able to change (from *variare*, to change); *flexibilis*, bendable (from *flexere*, to bend).

**-bundus -a -um**: indicates doing, like a present participle, or action accomplished; verb base; e.g. *floribundus*, flowering, full of flowers (from *florere*, to flower).

**-cellus -a -um, -illus -a -um, -ulus -a -um**: diminutive; adjectival base; e.g. *pilosiusculus*, slightly pilose (from *pilosus*, pilose, from *pilus*, hair), *rubellus*, reddish (from *ruber*, red).

**-cundus -a -um**: indicates an aptitude or constant tendency; e.g. *secundus* fruitful, *verecundus*, bashful; cf. Beneviste (1933).

**-ensis -is -e**: indicates country or place of growth or origin or else habitat; noun base; e.g. *bononiensis*, relating to Bononia (now Bologna), *pratensis*, growing in meadows (from *pratum*, meadow).

**-escens -is -e**: indicates process of becoming, hence not fully achieved resemblance, often expressed in English by the termination 'ish'; verb base, usually itself with a noun or adjectival base; e.g. *senescens*, becoming aged (from *senescere*, to grow old, from *senex*, old), *rubescens*, reddening, reddish (from *rubescere*, to grow red, from *ruber*, red).

**-estrus (-ester) -is -e**: indicates place of growth; noun base; e.g. *rupestris*, dwelling among rocks (from *rupes*, rock). After *u* the *e* is dropped, e.g. *lacustris*, dwelling in lakes (from *lacus*, lake).

**-eus -a -um**: indicates material or colour or resemblance in quality; noun base; e.g. *melleus*, pertaining to honey (from *mel*, honey), *purpureus*, purple (from *purpura*, the mollusc yielding a purple dye; cf. Chapter XVIII). This should not be confused with the Greek *-ēus* meaning

'belonging to' or 'noted for', e.g. *giganteus*, belonging to the giants, hence gigantic.

**-ibilis -is -e**: see above under *-bilis*.

**-icans**: indicates process of becoming or resemblance sometimes so close as to be almost identical; participal suffix with verb base from noun base; e.g. *nigricans*, blackish (from *nigricare*, to be blackish, from *niger*, black).

**-icius -a -um, -itus -a -um**: indicates result of an action; verb base; *adventicius*, come from abroad, foreign, out of the ordinary (from *advenire*, to come, arrive); cf. Wölfflin (1888).

**-idus -a -um**: indicates a state or an action in progress; verb, noun or adjectival base; e.g. *albidus*, whitish (from *albus*, white), *nitidus*, shining, polished (from *nitere*, to shine).

**-ilis -is -e**: indicates capacity or ability, hence a property or quality; verb base; e.g. *fragilis*, easily broken (ultimately from *frangere*, to break).

**-illus -a -um**: diminutive, like *-cellus*; see above.

**-ineus -a -um**: indicates material or colour or close resemblance, like *-eus* above; noun base.

**-inus -a -um**: indicates possession or resemblance; noun base; e.g. *marinus*, belonging to the sea (from *mare*, sea), *ovinus*, belonging to sheep (from *ovis*, sheep), *ursinus*, belonging to a bear, shaggy like a bear (from *ursus*, bear). This comes close to the Greek *ινος*, Latinized as *inus*, indicating material or colour, hence possession or resemblance, e.g. *hyacinthinus*, of or belonging to the hyacinth (from *hyacinthus*, hyacinth, *Hyacinthos*, pre-Greek name in Greek mythology).

**-ius -a -um**: means 'characteristic of', hence indicates connexion or resemblance; noun base; e.g. *regius*, royal (from *rex*, king).

**-ivus -a -um**: indicates capacity, ability, possession by or property of; verb or noun base; e.g. *sensitivus*, capable of feeling (from *sentire*, to feel).

**-izans**: means 'becoming like, resembling, forming'; noun base; e.g. *graecizans*, imitating the Greeks (from *Graeci*, the Greeks).

**-oideus -a -um**: indicates resemblance; noun base; see *-oides* below (p. 310).

**-olentus -a -um**: see *-ulentus* below.

**-orius -a -um**: indicates capability, action, or function; verb base; e.g. *tingorius*, belonging to dyeing (from *tingere*, to soak in colour).

**-osus -a -um**: indicates abundance or full or marked development; noun base; e.g. *venosus*, full of veins (from *vena*, vein); cf. Ernout (1949).

**-ulentus -a -um, -olentus -a -um**: indicates abundance or full or marked development; noun base; e.g. *succulentus*, full of juice, succulent (from *succus* or *sucus*, juice); *vinolentus*, full of wine, drunk (from *vinum*, wine); cf. Ernout (1949) Szemerényi (1954).

**-ulus -a -um**: (1) diminutive; adjectival base; e.g. *hispidulus*, minutely hispid (from *hispidus*, bristly); (2) indicates a tendency or action; verb base; e.g. *pendulus*, hanging down (from *pendere*, to suspend).

**-utus -a -um**: indicates possession; noun base; e.g. *cornutus*, horned (from *cornu*, horn).

**-uus -a -um**: indicates possibility or result of action; verb base, rarely noun base; e.g. *deciduus*, falling off (from *decidere*, to fall down).

## GREEK ADJECTIVAL SUFFIXES

- aeus -a -um: indicates 'belonging to'; noun base; e.g. *europaeus*, European (from *Europa*, Europe).
- eus -a -um: indicates 'possessed by' or belonging to; noun base, usually the name of a person; e.g. *giganteus*, huge (from *gigas*, giant).
- icus -a -um: indicates 'belonging to'; noun base; e.g. *arcticus*, arctic (from *Arctos*, the Great Bear constellation).
- ineus -a -um: indicates material or colour; e.g. *coccineus*, scarlet (from *coccus*; see Chapter XVIII).
- inus -a -um: indicates material or colour, resemblance or possession; noun base; e.g. *hyalinus*, transparent (from *hyalos*, glass).
- iticus -a -um: indicates fitness or capability for something or possession of.
- ius -a -um: 'characteristic of'; noun base.
- oides (see pp. 97, 265), -oideus -a -um; -odes: indicates resemblance; noun base; e.g. *arachnoides*, like a spider's web (from *arachnion*, spider's web), *physodes*, bladder-like (from *physa*, bladder).
- otus -a -um: indicates resemblance or possession; noun base; e.g. *lepidotus*, scaly (from *lepis*, scale).

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## CHAPTER XXII

## Descriptive Terminology

Linnaeus's *Philosophia botanica*, p. 311—Glossaries, p. 313—Lindley's survey of descriptive terminology, p. 313—Synopsis of sections, p. 314—Individual absolute terms, p. 320—General or solid form, p. 320—Outlines and plane shapes, p. 325—The apex, p. 328—The base, p. 330—The margin, p. 331—Incision, p. 332—Division or ramification, p. 334—Surface, p. 337—Markings or evenness, p. 337—Hair-covering and superficial processes, p. 338—Polish or texture, p. 339—Texture or substance, p. 340—Size, p. 341—Duration, p. 347—Veining, p. 342—Individual relative terms, p. 343—Aestivation, p. 343—Direction, p. 345—Insertion, p. 348—Collective terms, p. 349—Arrangement, p. 350—Index, p. 353.

## LINNAEUS'S PHILOSOPHIA BOTANICA

Modern botanical terminology derives largely from the works of Carl Linnaeus, notably his *Philosophia botanica* (1751; cf. Dahlgren, 1951), wherein under each organ, beginning with the root (*radix*) and proceeding upwards by way of the stem (*truncus*), leaf (*folium*), etc., to the seeds (*semina*), he listed the variants of each and thereby provided appropriate words for their recording. Between 1755 and 1824 this book was re-issued or revised eleven times. Every systematic botanist read it; L. C. Richard said he re-read it every year. Thus it established Linnaean method and terminology. In 1760 James Lee's *An Introduction to Botany* presented it 'cloathed in an English dress', apparently by S. F. Gray the elder; this was re-issued or revised eight times between 1765 and 1810. Another free translation into English was published in 1775 by Hugh Rose as *The Elements of Botany*.

A more literal French translation, *Philosophie botanique*, appeared in 1788, a Russian one, *Filosofiya botaniki*, in 1800. Thereafter, taking Linnaeus's work as a basis, British, French and German authors produced glossaries and surveys of terminology which added more and more terms and expressions designed to meet the needs of more and more precise observation. As stated by John Lindley, 'the language of Botany was, when Linnaeus left it, admirably suited to the demands then made upon it; and . . . if the scientific dictatorship which he exercised, had been seized by a successor capable of maintaining his authority, it would, perhaps, have lost none of its excellence. But the wants of science increased with its progress; as new organs were

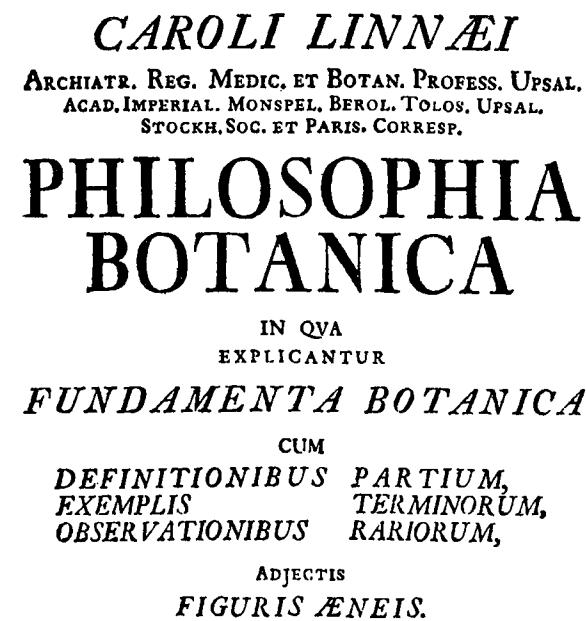


Fig. 16 Title-page of Carl Linnaeus, *Philosophia botanica* (1751)

distinguished, new substantives were wanted to express them . . . each nation or community studied for itself, thought for itself, and wrote for itself, and hence half a dozen names were proposed in different places to express the same idea.'

#### GLOSSARIES

This accumulation of words led to the production of yet more glossaries and surveys. They culminated in A. P. de Candolle's *Théorie élémentaire de la Botanique* (1813; 2nd ed., 1819; 3rd ed. 1844), Lindley's *An Introduction to Botany* (1832; 2nd ed., 1835; 3rd ed., 1839; 4th ed., 1848) and *The Elements of Botany* (1847), G. W. Bischoff's *Handbuch der botanischen Terminologie und Systemkunde* (3 vols., 1830-34) and *Wörterbuch der beschreibenden Botanik* (1839; 2nd ed., 1859) and E. Germain de Saint-Pierre's *Guide du Botaniste* (1852) and *Nouveau dictionnaire de Botanique* (1870).

#### LINDLEY'S SURVEY OF DESCRIPTIVE TERMINOLOGY

Lindley found that 'from one cause or another, whether accident, ignorance, pedantry, over-fastidiousness, vanity or carelessness', the language of botany was 'marvellously in want of reformation'. Following Link (1798), Illiger (1800) and de Candolle (1813), he distinguished the characteristic or common terms of general application from those which applied only to particular organs and he classified these terms into logical groups, as given below. His work, largely owing to the adoption of much of it by George Bentham (1861, etc.) and Asa Gray (1879, etc.), provides the foundation of botanical terminology in English-speaking countries. In his *Introduction* Lindley grouped together words of related meaning and gave Latin and English equivalents associated with definitions in classified order; in his *Elements of Botany* he listed them alphabetically. The abiding international value of these glossaries is indicated by the translation of the first into Spanish at Tucumán in 1951 and its re-issue in California in 1938 and in 1964. Lindley's general survey taken from his *Introduction to Botany*, 3rd ed. (1839) is accordingly reprinted below; most of his examples are either no longer necessary or refer to little-known plants and are omitted, but some additions, placed within square brackets, have been made to indicate divergent later usage. Rickett's four scholarly papers (1954-56), based on the examination of some 25 definitions for each of some important terms, make clear the current lack of consistency and need for standardization. The applications recommended by Rickett are accordingly noted below,

together with those for plane shapes provided by the Systematics Association Committee, the chart (1962; Fig. 19) of which is cited below as SADT. Even if standardization becomes general it will nevertheless remain necessary to keep in mind the somewhat different use of some terms in the past when interpreting the descriptions of a given author or period. The most complete glossary in English supplying Latin equivalents for many terms is B. D. Jackson's *Glossary of botanic Terms* (1900; 4th ed. 1928) unfortunately without illustrations. The best illustrated guide is the Russian-Latin *Organographia illustrata Plantarum vascularium* (1956-62) by Theodorov, Kirpicznikov and Artjuschenko.

Lindley's survey of descriptive botanical terminology modified as stated above still provides a basic glossary of botanical Latin even though a few of his English equivalents such as 'leprous' for *lepidotus* (lepidote), 'bossed' for *umbonatus* (umbonate), 'knee pan-shaped' for *patelliformis* (patelliform), 'pointleted' for *apiculatus* (apiculate), are now obsolete. Below its items are numbered continuously instead of section by section.

#### SYNOPSIS OF TERMINOLOGY

CHARACTERISTIC TERMS are either Individual or Collective.

I CHARACTERISTIC INDIVIDUAL TERMS are either Absolute or Relative.

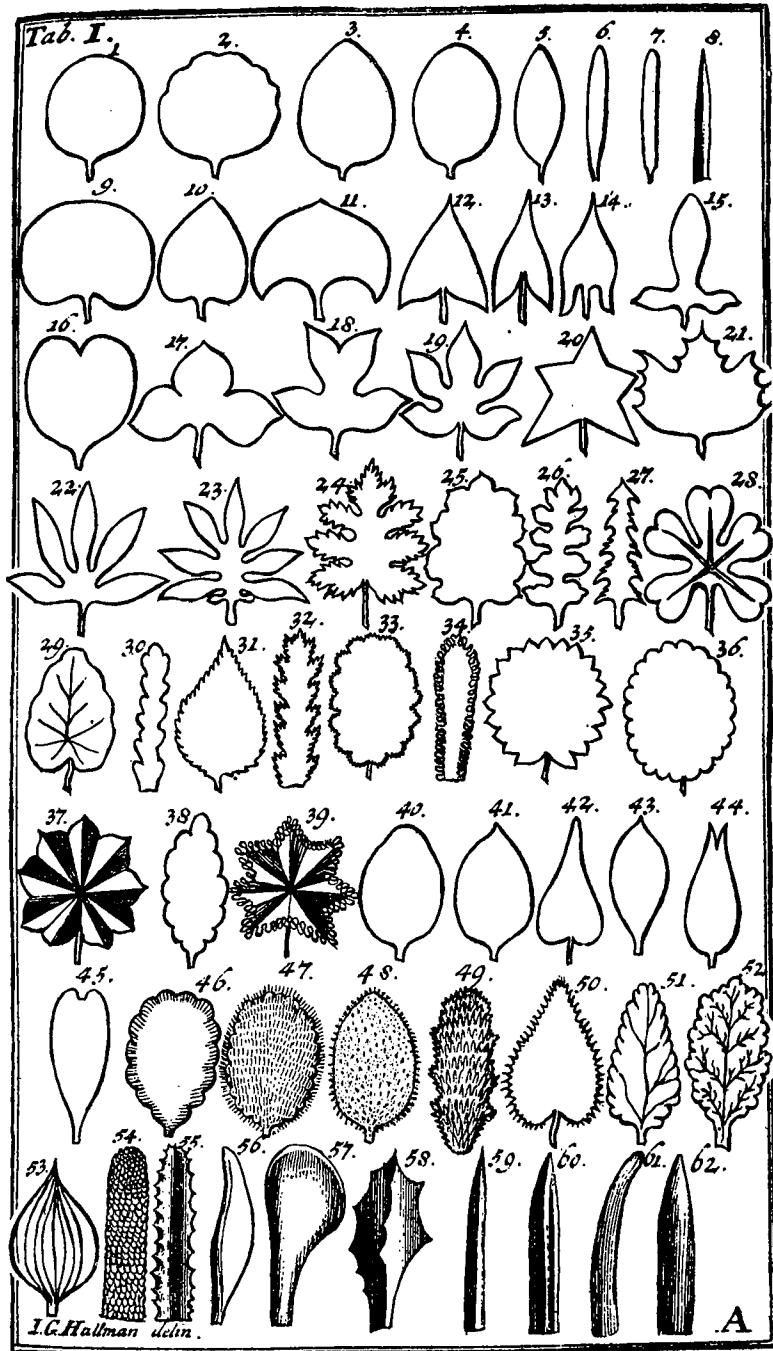
INDIVIDUAL ABSOLUTE TERMS relate to

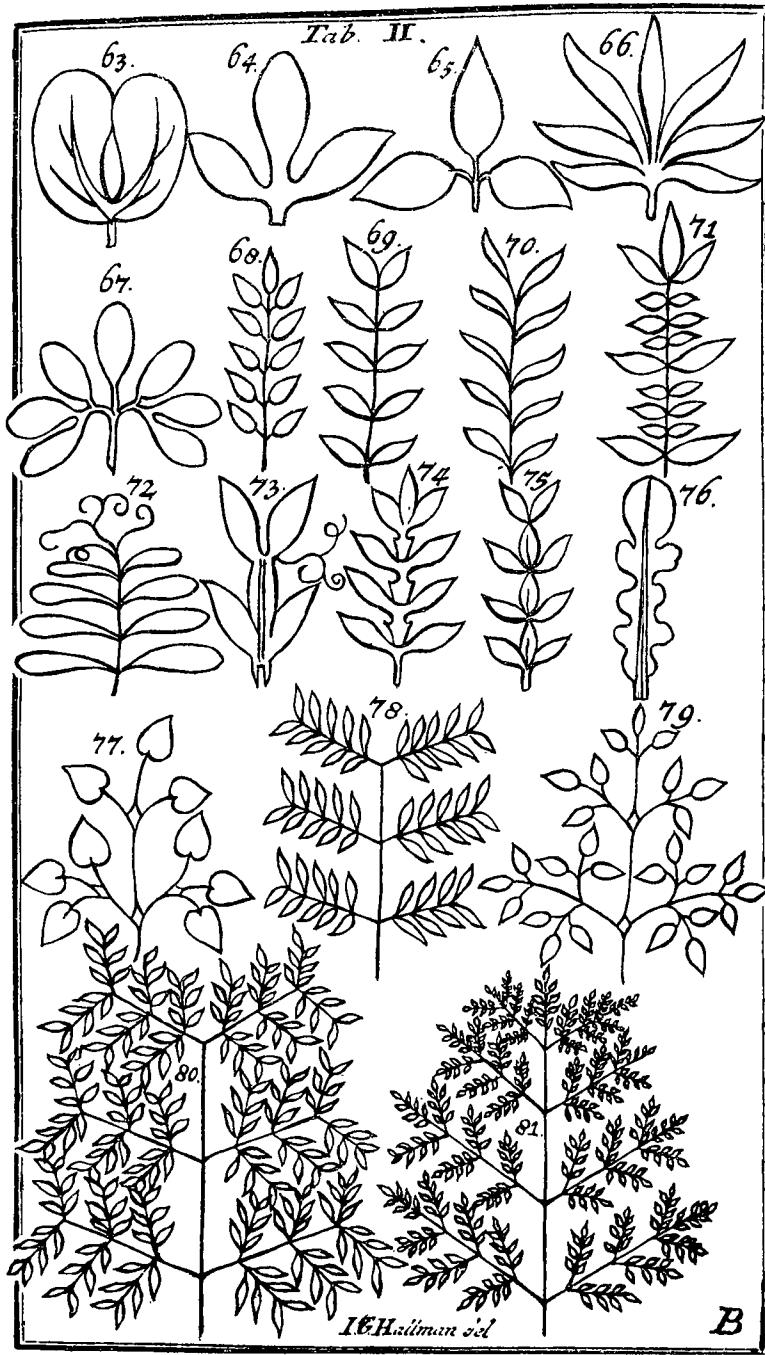
1. *Figure*

- A General or Solid Form (Nos. 1-101)
- B Outlines and Plane Shapes (Nos. 102-138)
- C The Apex (Nos. 139-165)
- D The Base (Nos. 166-178)

Fig. 17 Types of simple Leaves and Indumentum as illustrated in Linnaeus, *Philosophia botanica* (1751)

1, Orbiculatum; 2, Subrotundum; 3, Ovatum; 4, Ovale s. *Ellipticum*; 5, Oblongum; 6, Lanceolatum; 7, Lineare; 8, Subulatum; 9, Reniforme; 10, Cordatum; 11, Lunulatum; 12, Triangulare; 13, Sagittatum; 14, *Cordato-sagittatum*; 15, Hastatum; 16, Fissum; 17, Trilobum; 18, Praemorsum; 19, Lobatum; 20, Quinquangulare; 21, Erosum; 22, Palmatum; 23, Pinnatifidum; 24, Laciniatum; 25, Sinuatum; 26, *Dentato-sinuatum*; 27, *Retrorsum sinuatum*; 28, Partitum; 29, Repandum; 30, Dentatum; 31, Serratum; 32, *Duplicato-serratum*; 33, *Duplicato-crenatum*; 34, Cartilagineum; 35, Acute crenatum; 36, Obtuse crenatum; 37, Plicatum; 38, Crenatum; 39, Crispum; 40, Obtusum; 41, Acutum; 42, Acuminatum; 43, *Obtusum acumine*; 44, Emarginatum acute; 45, *Cuneiforme emarginatum*; 46, Retusum; 47, Pilosum; 48, Tomentosum; 49, Hispidum; 50, Ciliatum; 51, Rugosum; 52, Venosum; 53, Nervosum; 54, Papillosum; 55, Linguiforme; 56, Acinaciforme; 57, Dolabriiforme; 58, Deltoides; 59, Triquetrum; 60, Canaliculatum; 61, Sulcatum; 62, Teres



2. *Division*

- E The Margin (Nos. 179-188)
- F Incision (Nos. 189-200)
- G Division or Ramification (Nos. 201-244)

3. *Surface*

- H Markings or Evenness (Nos. 245-259)
- J Hair-covering and Superficial Processes (Nos. 260-293)
- K Polish or Texture (Nos. 294-309)

4. *Texture or Substance* (Nos. 310-334)5. *Size* (Nos. 335-341)6. *Duration* (No. 342)7. *Colour* (see Chapter XVIII)8. *Variegation* (see Chapter XVIII)9. *Veining* (Nos. 343-364)

## INDIVIDUAL RELATIVE TERMS comprehend

- 10. *Aestivation and Vernation* (Nos. 365-386)
- 11. *Direction* (Nos. 387-436)
- 12. *Insertion* (Nos. 437-474)

## II CHARACTERISTIC COLLECTIVE TERMS relate to

- 13. *Arrangement* (Nos. 475-505)
- 14. *Number* (see Chapter VIII)

## CLASS I. OF INDIVIDUAL TERMS

The terms which are included in this class are applied to the parts of a plant considered by themselves, and not in masses: they are either *absolute*, being used with reference to their own individual quality; or *relative*, being employed to express the relation which is borne by plants, or their parts, to some other body. Thus, for example, when we say that a plant has a *lateral ovate* spike of flowers, the term *lateral* is relative, being used to express the relation which the spike bears to the stem; and the term *ovate* is absolute, being expressive of the actual form of the spike: and, again, in speaking of a *rugose terminal* capsule, *rugose* is absolute, *terminal* is relative.

Fig. 18 Types of compound Leaves as illustrated in Linnaeus,  
*Philosophia botanica* (1751)

63, Binatum; 64, Ternatum *foliolis sessilibus*; 65, do. *petiolatis*; 66, Digitatum; 67, Pedatum; 68, Pinnatum *cum impari*; 70, do. *alternatum*; 71, do. *interrupte*; 72, do. *cirrhosum*; 73, do. *conjugatum*; 74, do. *decursive*; 75, do. *articulatum*; 76, Lyratum; 77, Bitemnatum, *Duplicato-ternatum*; 78, Bipinnatum (Sauvag.), *Duplicato-pinnatum*; 79, Ternatum, *Triplacito-ternatum*; 80, Tripinnatum (Sauvag.), *sine impari*; 81, do. *cum impari*

## SYSTEMATICS ASSOCIATION : DESCRIPTIVE TERMINOLOGY

CHART 1a  
Symmetric Plane Figures

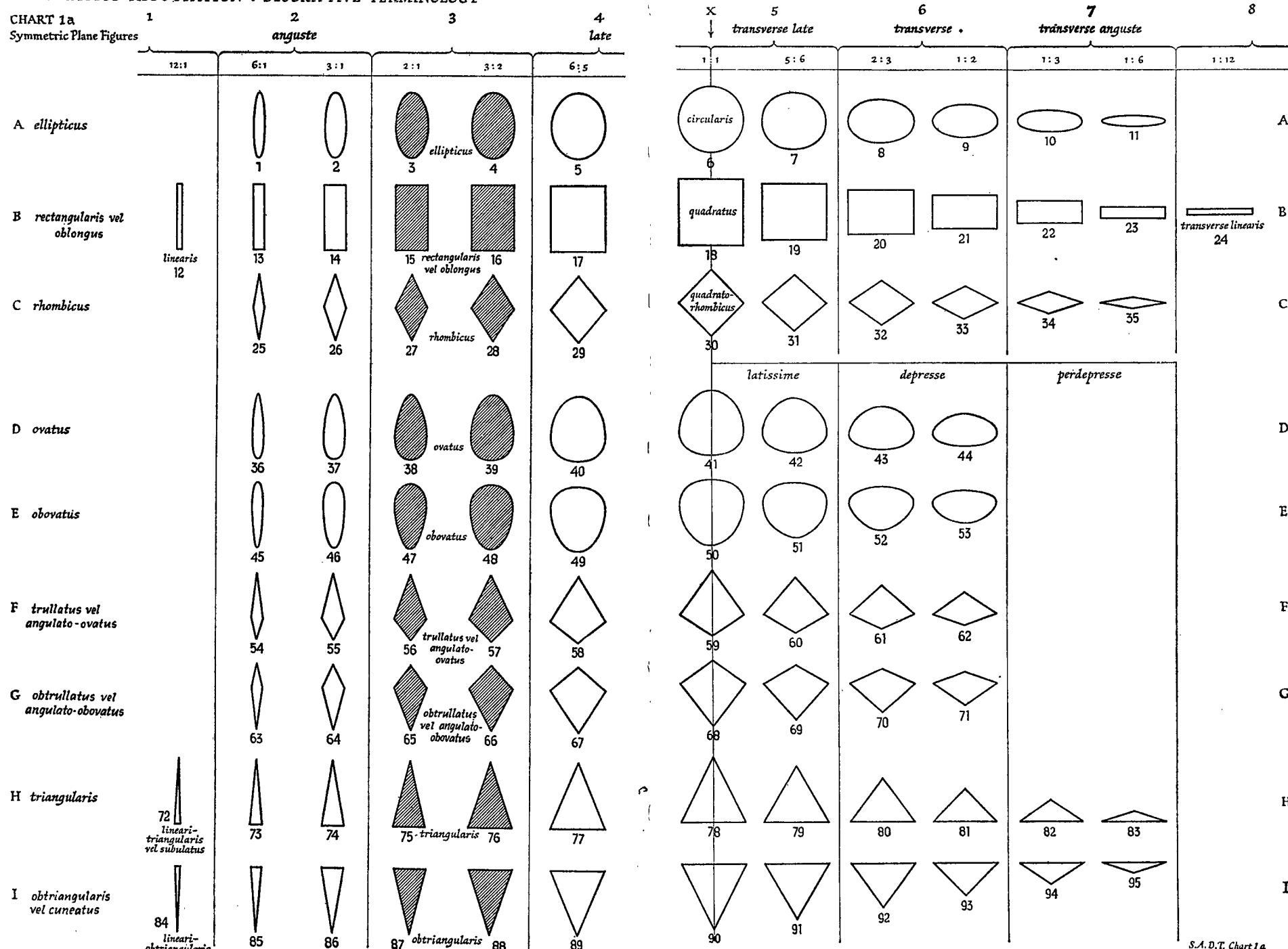


Fig. 19 Chart of simple symmetrical plane Shapes  
 (From Systematics Association Committee for descriptive Biological Terminology in *Taxon*, 11; 1962)

## INDIVIDUAL ABSOLUTE TERMS

These relate to figure, division, surface, texture, size, duration, colour, variegation and veining.

## 1. FIGURE

## A. GENERAL OR SOLID FORM

1. **Conicus, pyramidalis** (Conical): having the figure of a true cone.
2. **Conoideus** (Conoidal): resembling a conical figure, but not truly one.
3. **Prismaticus** (Prism-shaped): having several longitudinal angles and intermediate flat faces.
4. **Globosus, sphaericus** (Globose): forming nearly a true sphere.
5. **Cylindricus** (Cylindrical): having nearly a true cylindrical figure.
6. **Tubulosus** (Tubular): approaching a cylindrical figure and hollow.
7. **Fistulosus** (Fistulous): this is said of a cylindrical or terete body, which is hollow, but closed at each end.
8. **Cubicus** (Cubical): having or approaching the form of a cube.
9. **Clavatus, claviformis** (Club-shaped): gradually thickening upwards from a very tapering base.
10. **Turbinatus** (Turbinate or top-shaped): inversely conical, with a contraction towards the point.
11. **Pyriformis** (Pear-shaped): differing from turbinate in being more elongated.
12. **Lachrymiformis** (Tear-shaped): the same as pear-shaped, except that the sides of the inverted cone are not contracted.
13. **Strombuliformis** (Strombus-shaped): twisted in a long spire, so as to resemble the convolutions of the shell called a Strombus.
14. **Spiralis** (Spiral): twisted like a corkscrew.
15. **Cochleatus** (Cochleate): twisted in a short spire, so as to resemble the convolutions of a snail-shell.
16. **Napiformis** (Turnip-shaped): having the figure of a depressed sphere.
17. **Placentiformis** (Placenta-shaped): thick, round, and concave, both on the upper and lower surface.
18. **Lenticularis, lentiformis** (Lens-shaped): resembling a double convex lens.
19. **Scutatus, scutiformis** (Buckler-shaped): having the figure of a small round buckler; lens-shaped, with an elevated rim.
20. **Umbonatus** (Bossed): round, with a projecting point in the centre, like the boss of an ancient shield.
21. **Gibbus, gibbosus** (Gibbous): very convex or tumid; as the leaves of many succulent plants: properly speaking, this term should be restricted to solid convexities.
22. **Meloniformis** (Melon-shaped): irregularly spherical, with projecting ribs: a bad term.

23. **Sphaeroideus** (Spheroidal): a solid with a spherical figure, a little depressed at each end. *De Cand.*
24. **Ellipsoideus** (Ellipsoidal): a solid with an elliptical figure. *De Cand.*
25. **Ovoideus** (Ovoidal): a solid with an ovate figure, or resembling an egg. *De Cand.*
26. **Clypeatus** (Shield-shaped): in the form of an ancient buckler: [almost] the same as scutate, No. 19.
27. **Fusiformis** (Spindle-shaped): thick, tapering to each end.
28. **Teres** (Terete): the opposite of angular: usually employed in contradistinction to that term, when speaking of long bodies. Many stems are terete.

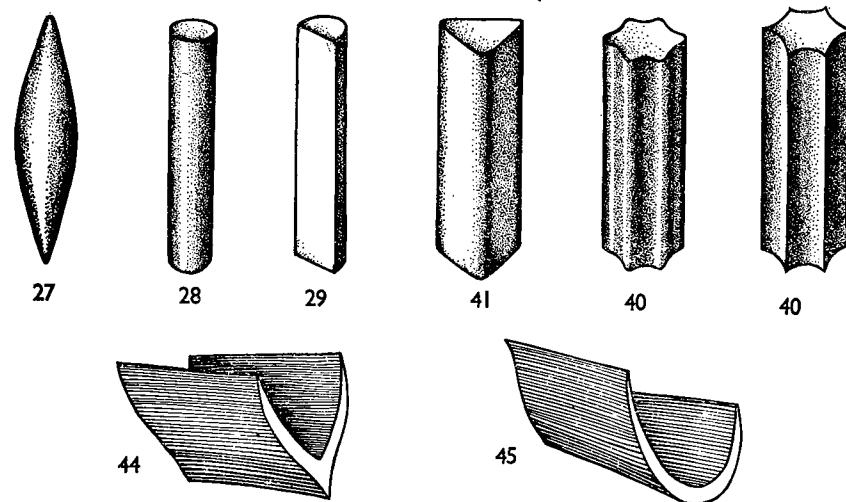


Fig. 20 Sections of Stems and Leaves

27, fusiformis; 28, teres; 29, semiteres; 40, angulosus, 40 sinist., obtusangulus, 40 dext., acutangulus; 41, trigonus; 44, carinatus; 45, canaliculatus (after J. Lindley, *Introduction to Botany*; 1832)

29. **Semiteres** (Half-terete): flat on one side, terete on the other.
30. **Compressus** (Compressed): flattened lengthwise; as the pod of a Pea.
31. **Depressus** (Depressed): flattened vertically.
32. **Planus** (Plane): a perfectly level or flat surface.
33. **Pulvinatus** (Cushioned): convex, or rather flattened.
34. **Discoideus** (Discoidal): orbicular, with some perceptible thickness, parallel faces, and a rounded border.
35. **Arcuatus, curvatus** (Curved): bent, but so as to represent the arc of a circle.
36. **Acinaciformis** (Scimitar-shaped): curved, fleshy, plane on the two sides, the concave border thick, the convex border thin.
37. **Dolabriformis** (Axe-shaped): fleshy, nearly straight, somewhat terete at the base, compressed towards the upper end; one border thick and straight, the other enlarged, convex, and thin.

38. **Falcatus** (Falcate): plane and curved, with parallel edges, like the blade of a reaper's sickle; any degree of curvature, with parallel edges, receives this name.

39. **Linguiformis** (Tongue-shaped): long, fleshy, plano-convex, obtuse.

40. **Angulosus** (Angular): having projecting longitudinal angles. We say *obtuse-angled* [*obtusangulus*] Fig. 40 sinist., when the angles are rounded; and *acute-angled* [*acutangulus*] Fig. 40 dext., when they are sharp. Some call these angles the *acies*.

41. **Trigonus** (Three-cornered): having three longitudinal angles and three plane faces.

42. **Triqueter** (Three-edged): having three acute angles with concave faces; generally used as a synonym of trigonus.

43. **Anceps** (Two-edged): compressed, with two sharp edges.

44. **Carinatus** (Keeled): formed in the manner of the keel of a boat; that is to say, with a sharp projecting ridge, arising from a flat or concave central rib.

45. **Canaliculatus** (Channelled): long and concave, so as to resemble a gutter or channel.

46. **Navicularis, cymbiformis** (Boat-shaped): having the figure of a boat in miniature; that is to say, concave, tapering to each end, with a keel externally.

47. **Flagelliformis** (Whip-shaped): long, tapering and supple, like the thong of a whip. This term is confined to stems and roots.

48. **Funalis** (Rope-shaped): formed of coarse fibres resembling cords. *Mirbel.*

49. **Filiformis** (Thread-shaped): slender like a thread; as the filaments of most plants, and the styles of many.

50. **Capillaris** (Hair-shaped): the same as filiform, but more delicate so as to resemble a hair; it is also applied to the fine ramifications of the inflorescence of some plants.

51. **Moniliformis** (Necklace-shaped): cylindrical or terete and contracted at regular intervals.

52. **Vermicularis** (Worm-shaped): thick and almost cylindrical, but bent in different places. *Willd.*

53. **Torulosus** (Knotted): a cylindrical body, uneven in surface; very nearly the same as moniliform.

54. **Tubiformis, tubatus** (Trumpet-shaped): hollow, and dilated at one extremity, like the end of a trumpet. *De Cand.*

55. **Cornutus, corniculatus** (Horned): terminating in a process resembling a horn. If there are two horns, the word *bicornis* is used; if three, *tricornis*; and so on.

56. **Proboscideus** (Beaked): having a hard terminal horn.

57. **Cristatus** (Crested): having an elevated, irregular, or notched ridge, resembling the crest of a helmet. This term is chiefly applied to seeds and to the appendages of the anthers of some Ericae.

58. **Petaloideus** (Petal-like): having the colour and texture of a petal.

59. **Foliaceus** (Leaf-like): having the texture or form of a leaf.

60. **Alatus** (Winged): having a thin broad margin. In composition *pterus* is used; as *dipterus* for two-winged, *tripterus* for three-winged, *tetrapterus* for four-winged, etc.; *peripterus* when the wing surrounds anything; *epipterus* when it terminates.

61. **Molendinaceus** (Mill-sail-shaped): having many wings projecting from a convex surface.

62. **Gongyloides** (Knob-like): having an irregular roundish figure.

63. **Dimidiatus** (Halved): only half, or partially, formed. A leaf is called dimidiate when one side only is perfect; an anther when one lobe only is perfect; and so on.

64. **Flabelliformis** (Fan-shaped): plaited like the rays of a fan.

65. **Grumosus** (Grumous): in form of little clustered grains.

66. **Testiculatus** (Testicular): having the figure of two oblong bodies.

67. **Ringens, personatus** (Ringent or personate): a term applied to a monopetalous corolla, the limb of which is unequally divided; the upper division, or lip, being arched; the lower prominent, and pressed against it, so that when compressed, the whole resembles the mouth of a gaping animal.

68. **Labiatus** (Labiate): a term applied to a monopetalous calyx or corolla which is separated into two unequal divisions; the one anterior and the other posterior, with respect to the axis; hence bilabiate [*bilabiatus*] is more commonly used than labiate. It is often employed instead of ringent.

69. **Rotatus** (Wheel-shaped): a calyx or corolla, or other organ, of which the tube is very short and the segments spreading.

70. **Hypocrateriformis** (Salver-shaped): a calyx or corolla, or other organ, of which the tube is long and slender, and the limb flat.

71. **Infundibularis, infundibuliformis** (Funnel-shaped): a calyx or corolla, or other organ, in which the tube is obconical, gradually enlarging upwards into the limb, so that the whole resembles a funnel.

72. **Campanulatus, campaniformis** (Bell-shaped): a calyx, corolla or other organ, in which the tube is inflated, and gradually enlarged into a limb, the base not being conical.

73. **Urceolatus** (Pitcher-shaped): the same as campanulate, but more contracted at the orifice, with an erect limb.

74. **Cyathiformis** (Cup-shaped): the same as pitcher-shaped, but not contracted at the margin; the whole resembling a drinking-cup.

75. **Cupuliformis** (Cupola-shaped): slightly concave, with a nearly entire margin.

76. **Patelliformis** (Kneepan-shaped): broad, round, thick; convex on the lower surface, concave on the other: the same as *meniscoideus*, but thicker.

77. **Trochlearis** (Pulley-shaped): circular, compressed, contracted in the middle of the circumference, so as to resemble a pulley.

78. **Scutelliformis** (Scutelliform): the same as patelliform, but oval; not round.

79. **Muscariformis** (Brush-shaped): formed like a brush or broom; that is

to say, furnished with long hairs towards one end of a slender body. [Corresponds to *penicillatus* of later authors].

80. **Acetabuliformis** (Acetabuliform): concave, depressed, round, with a border a little turned inwards.

81. **Crateriformis** (Goblet-shaped): concave, hemispherical, a little contracted at the base.

82. **Cotyliformis** (Cotyoform): resembling rotate [no. 69], but with an erect limb.

83. **Poculiformis** (Poculiform): cup-shaped, with a hemispherical base and an upright limb; nearly the same as *campanulate* [no. 72].

84. **Scrofuliformis** (Pouch-shaped): hollow, and resembling a little double bag.

85. **Digitaliformis** (Foxglove-shaped): like *campanulate*, but longer, and irregular.

86. **Vascularis** (Vase-shaped): formed like a flower-pot; that is to say, resembling an inverted truncate cone. [*Vascularis* is now rarely if ever used in this sense which corresponds to *olliformis*].

87. **Taenianus** (Tapeworm-shaped): long, cylindrical, contracted in various places, in the manner of the tapeworm.

88. **Botuliformis** (Sausage-shaped): long, cylindrical, curved inwards at each end.

89. **Umbraculiformis** (Umbrella-shaped): resembling an expanded umbrella; that is to say, hemispherical and convex, with rays or plaits, proceeding from a common centre.

90. **Meniscoideus** (Meniscoid): thin, concavo-convex, and hemispherical, resembling a watch-glass.

91. **Fungiformis, fungilliformis** (Mushroom-headed): cylindrical, having a rounded, convex, overhanging extremity.

92. **Modioliformis** (Nave-shaped): hollow, round, depressed, with a very narrow orifice.

93. **Cucullatus** (Hooded): a plane body, the apex or sides of which are curved inwards, so as to resemble the point of a slipper, or a hood.

94. **Selliformis** (Saddle-shaped): oblong, with the sides hanging down, like the laps of a saddle.

95. **Turgidus** (Turgid): slightly swelling.

96. **Inflatus** (Bladdery): thin, membranous, slightly transparent, swelling equally, as if inflated with air.

97. **Ventricosus** (Bellying): swelling unequally on one side.

98. **Regularis** (Regular): in which all the parts are symmetrical. A rotate corolla is regular; the flower of a Cherry is regular.

99. **Irregularis** (Irregular): in which symmetry is destroyed by some inequality of parts. A labiate corolla and the flowers of the Horse-chestnut and the Violet are irregular.

100. **Abnormis** (Abnormal): in which some departure takes place from the ordinary structure of the family or genus to which a given plant belongs. Thus, *Nicotiana multivalvis*, in which the ovary has many cells instead of two, is unusual or abnormal.

101. **Normalis** (Normal): in which the ordinary structure peculiar to the family or genus of a given plant is in no wise departed from.

#### B. OUTLINES AND PLANE SHAPES

[The standardized terms for simple symmetrical plane shapes adopted by the Systematics Association Committee in *Taxon* 11: 145-156, 245-247 (1962) are cited below as SADT; see Fig. 19.]

102. **Ambitus, circumscriptio** (Outline): the figure represented by the margin of a body.

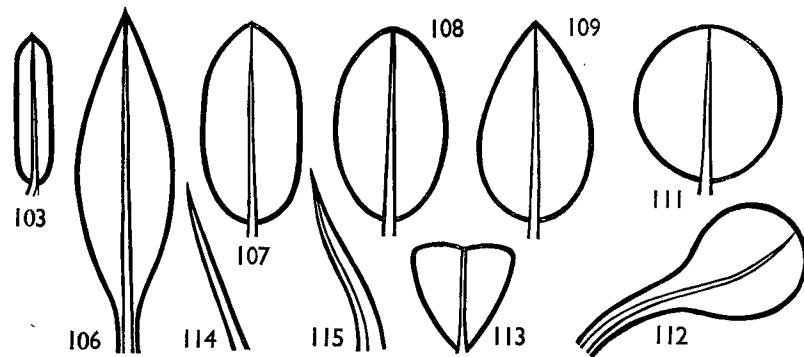


Fig. 21 Outlines of Leaves, etc.

103, linearis, sensu Lindleyi (= *anguste oblongus*); 106, lanceolatus, sensu Lindleyi (= *anguste ellipticus*); 107, oblongus; 108, ellipticus; 109, ovatus; 111, rotundus; 112, spatulatus; 113, cuneiformis; 114, subulatus; 115, acerosus (after J. Lindley, *Introduction to Botany*; 1832).

103. **Linearis** (Linear): narrow, short, with the two opposite margins parallel: [= *anguste oblongus* SADT nos. 13-14; length : breadth = 6 : 1 to 3 : 1].

104. **Fasciarius** (Band-shaped): narrow, very long, with the two opposite margins parallel: [= *linearis* SADT no. 12; length : breadth = 12 or more : 1].

105. **Ligulatus, loratus** (Strap-shaped): narrow, moderately long, with the two opposite margins parallel: [= *anguste oblongus* SADT nos. 13-14].

106. **Lanceolatus** (Lanceolate): narrowly elliptical, tapering [equally] to each end; as the leaf of *Plantago lanceolata*, *Daphne Mezereum*, etc.: [= *anguste ellipticus* SADT nos. 1-2; length : breadth = 6 : 1 to 3 : 1; the discordant use of *lanceolatus* by Lindley and Asa Gray is discussed by Alph. de Candolle, 1880: 198-200].

107. **Oblongus** (Oblong): elliptical, obtuse at each end: [= *oblongus* SADT nos. 15-16; length : breadth = 2 : 1 to 3 : 2, the sides almost parallel; discussed by Rickett, 1954a: 14].

108. **Ellipticus, ovalis** (Oval): elliptical, acute at each end: [= *ellipticus*

SADT nos. 3-4; length : breadth 2:1 to 3:2 with sides curved equally from middle].

109. **Ovatus (Ovate)**: oblong or elliptical, broadest at the lower end, so as to resemble the longitudinal section of an egg: [SADT nos. 38-39; length : breadth = 2:1 to 3:2, broadest below the middle].

110. **Orbicularis (Orbicular)**: perfectly circular: [= *circularis* SADT no. 6].

111. **Rotundus, subrotundus, rotundatus (Roundish)**: orbicular, a little inclining to be oblong [= *late ellipticus* SADT no. 5; length : breadth = 6:5, broadest at middle].

112. **Spatulatus (Spatulate)**: oblong, with the lower end very much attenuated, so that the whole resembles a chemist's spatula.

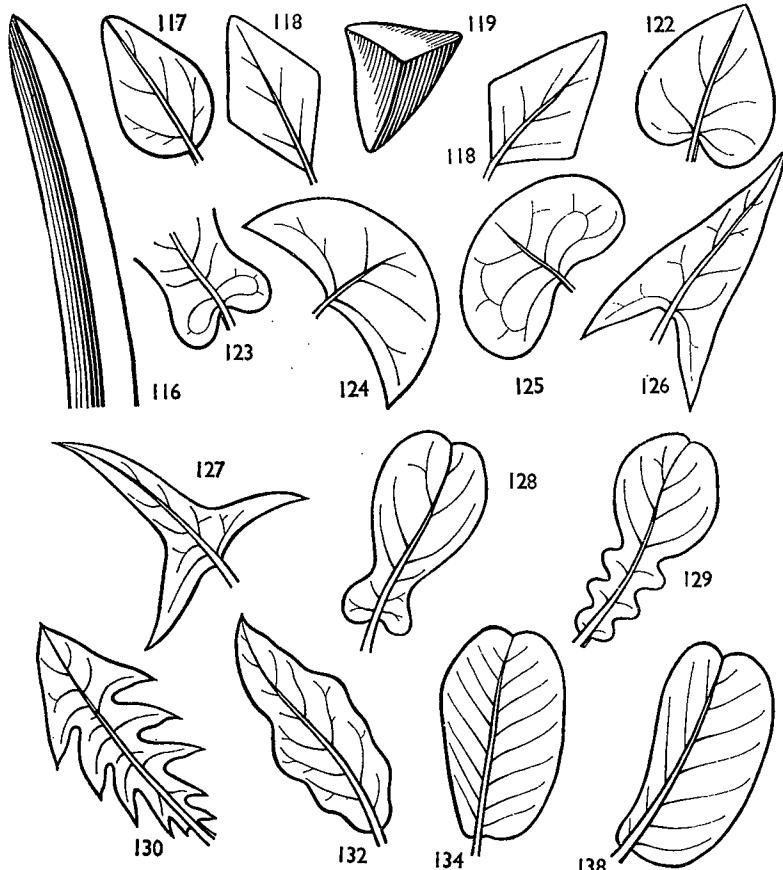


Fig. 22 Outlines of Leaves

116, ensiformis; 117, parabolicus; 118, rhombeus; 119, deltoides; 122, cordiformis; 123, auriculatus; 124, lunatus; 125, reniformis; 126, sagittatus; 127, hastatus; 128, panduratus; 129, lyratus; 130, runcinatus; 132, undulatus; 134, inaequalis; 138, dimidiatus (after J. Lindley, *Introduction to Botany*; 1832)

113. **Cuneiformis (Wedge-shaped)**: inversely triangular, with rounded angles: [= *obtriangularis* SADT no. 90].

114. **Subulatus (Awl-shaped)**: linear, very narrow, tapering to a very fine point from a broadish base.

115. **Acerosus (Needle-shaped)**: linear, rigid, tapering to a fine point from a narrow base.

116. **Ensiformis, gladiatus (Sword-shaped)**: lorate, quite straight, with the point acute.

117. **Parabolicus (Parabolical)**: between ovate and elliptical, the apex being obtuse.

118. **Rhombeus, rhomboideus (Rhomboïd)**: oval, a little angular in the middle: [= *rhombeus* SADT nos. 27, 28].

119. **Deltoides (Deltoid)**: a solid, the transverse section of which has a triangular outline, like the Greek  $\Delta$ .

120. **Triangularis (Triangular)**: having the figure of a triangle of any kind: [SADT nos. 73-85].

121. **Trapeziformis (Trapeziform)**: having four edges, those which are opposite not being parallel.

122. **Cordatus, cordiformis (Heart-shaped)**: having two round lobes at the base [*cordatus*], the whole resembling the heart in a pack of cards [*cordiformis*].

123. **Auriculatus (Eared)**: having two small rounded lobes at the base.

124. **Lunatus, lunulatus, semilunatus (Crescent-shaped)**: resembling the figure of the crescent.

125. **Reniformis (Kidney-shaped)**: resembling the figure of a kidney, that is to say crescent-shaped, with the ends rounded.

126. **Sagittatus (Arrow-headed)**: gradually enlarged at the base into two straight lobes, like the head of an arrow.

127. **Hastatus (Halbert-headed)**: abruptly enlarged at the base into two acute diverging lobes, like the head of a halbert.

128. **Panduratus, panduriformis (Fiddle-shaped)**: obovate, with a deep recess or sinus on each side.

129. **Lyratus (Lyre-shaped)**: the same as panduriform, but with several sinuses on each side, which gradually diminish in size to the base.

130. **Runcinatus (Runcinate or hook-backed)**: curved in a direction from the apex to the base [i.e. with prominent teeth pointing towards the base].

131. **Attenuatus (Tapering)**: gradually diminishing in breadth.

132. **Undulatus (Wavy)**: having an uneven, alternately convex and concave margin.

133. **Aequalis (Equal)**: when both sides of a figure are symmetrical.

134. **Inaequalis (Unequal)**: when the two sides of a figure are not symmetrical.

135. **Aequilaterus (Equal-sided)**: the same as equal.

136. **Inaequilaterus (Unequal-sided)**: the same as unequal.

137. **Obliquus (Oblique)**: when the degree of inequality in the two sides is slight.

138. **Dimidiatus (Halved)**: when the degree of inequality is so great that one half of the figure is either wholly or nearly wanting [see no. 63].

## C. THE APEX

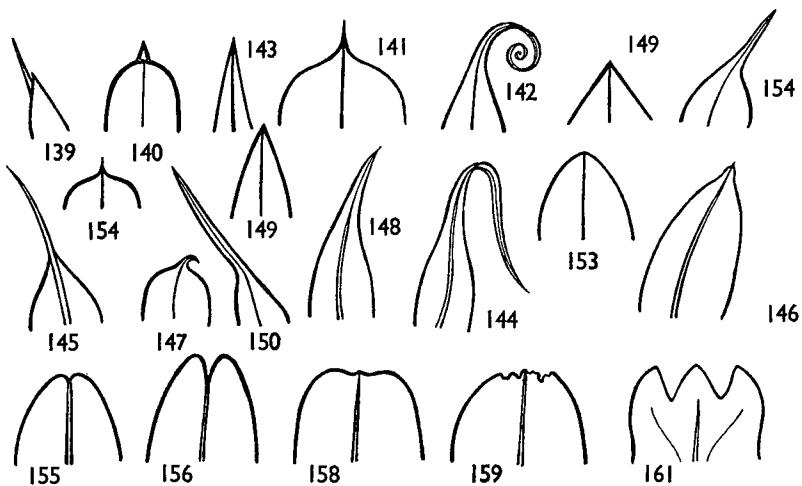


Fig. 23 Apices of Leaves, etc.

139, aristatus; 140, mucronatus; 141, cuspidatus; 142, cirrhosus; 143, pungens; 144, setosus; 145, piliferus; 146, apiculatus; 147, uncinatus; 148, rostratus; 149, acutus; 150, acuminatus; 153, obtusus; 154, obtusus cum acumine; 155, retusus; 156, emarginatus; 158, truncatus; 159, praemorsus; 161, tridentatus (after J. Lindley, *Introduction to Botany*; 1832).

[The divergent use of terms to describe apices is discussed by Rickett in *Bull. Torrey Bot. Club*, 83: 342-354 (1956).]

139. **Aristatus** (Awned): abruptly terminated in a hard, straight, subulate point of various lengths: [provided with a bristle-like appendage, cf. Rickett, p. 349]. The arista is always a continuation of the costa, and sometimes separates from the lamina below the apex.
140. **Mucronatus** (Mucronate): abruptly terminated by a hard short point: [cf. Rickett, p. 348].
141. **Cuspidatus** (Cuspidate): tapering gradually into a rigid point. It is also used sometimes to express abruptly acuminate [cf. Rickett, p. 348].
142. **Cirrhosus** (Cirrhus): terminated by a spiral, or flexuose, filiform appendage. This is due to an elongation of a costa.
143. **Pungens** (Pungent): terminating gradually in a hard sharp point.
144. **Setosus** (Bristle-pointed): terminating gradually in a very fine sharp point. [*Setosus* usually means 'beset with bristles', as in *hispidus*, no. 227, *echinatus*, no. 263].
145. **Piliferus** (Hair-pointed): terminating in a very fine weak point.
146. **Apiculatus** (Pointleted): terminating abruptly in a little point; differing from mucronate in the point being part of the limb, and not arising wholly from a costa.

147. **Uncinatus, uncatus** (Hooked): curved suddenly back at the point.
148. **Rostratus, rostellatus** (Beaked): terminating gradually in a hard, long, straight point.
149. **Acutus** (Acute, or sharp-pointed): terminating at once in a point, not abruptly, but without tapering in any degree [i.e. with two almost straight lines converging at an angle of less than 90°; cf. Rickett, p. 343].
150. **Acuminatus** (Taper-pointed): terminating very gradually in a point [now 'applied to an apex bounded by lines or surfaces which change from straight or convex to concave and converge gradually to a point'; cf. Rickett, p. 346].
151. **Acuminose** (Acuminose): terminating gradually in a flat narrow end.
152. **Caudatus** (Tail-pointed): excessively acuminate, so that the point is long and weak, like the tail of some animal [cf. Rickett, p. 350].
153. **Obtusus** (Blunt): terminating gradually in a rounded end [i.e. rounded enough for an angle of 90° to be placed inside it; *rotundatus*, like an arc of a circle; cf. Rickett, p. 343].
154. **Obtusus cum acumine** (Blunt with a point): terminating abruptly in a round end, the middle of which is suddenly lengthened into a point.
155. **Retusus** (Retuse): terminating in a round end, the centre of which is depressed [with a rounded sinus at the apex; cf. Rickett, p. 350].
156. **Emarginatus** (Emarginate): having a notch at the end, as if a piece had been taken out [indented with acute sinus; cf. Rickett, p. 350].
157. **Accisus**: when the end has an acute sinus between two rounded angles. *Link.* [Essentially as emarginate.]
158. **Truncatus** (Truncate): terminating very abruptly, as if a piece had been cut off.
159. **Praemorsus** (Bitten): the same as truncate, except that the termination is ragged and irregular, as if bitten off.
160. **Daedaleus** (Daedaleous): when the point has a large circuit, but is truncated and rugged. *W.*
161. **Tridentatus** (Trident-pointed): when the point is truncated, and has three indentations *W.*
162. **Capitatus** (Headed): suddenly much thicker at the point than in any other part; a term confined to cylindrical or terete bodies; glandular hairs, etc.
163. **Lamellatus, lamellosus** (Lamellar): having two little plates at the point.
164. **Hebetatus** (Blunted): having a soft obtuse termination.
165. **Muticus** (Pointless). This term is employed only in contradistinction to some other that indicates being pointed; thus, if, in contrasting two things, one were said to be mucronate, the other, if it had not a mucro, would be called pointless; and the same term would be equally employed in contrast with cuspidate or aristate, or any such. It is also used absolutely.

## D. THE BASE

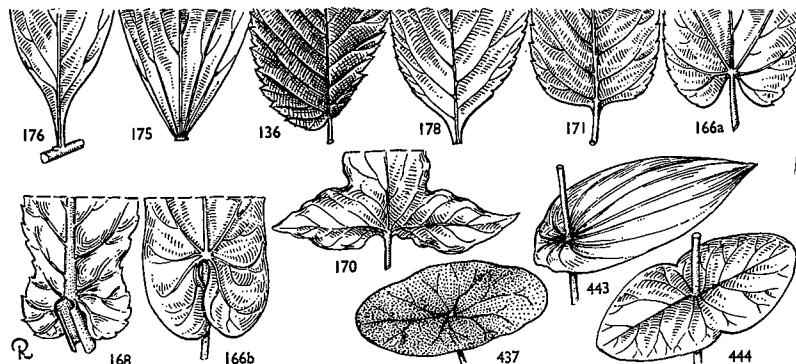


Fig. 24 Bases of Leaves

136, *inaequilaterus*; 166a, *cordatus*; 166b, *profunde cordatus lobis basalibus imbricatis*; 170 (127), *hastatus*; 171 (158), *truncatus*; 168 (123), *auriculatus*; 175, *cuneatus*; 176, *angustatus*; 178, *breve angustatus*; 437, *peltatus*; 443, *perfoliatus*; 444, *connatus* (by Marion E. Ruff, from G. H. M. Lawrence, *Introduction to Plant Taxonomy*; 1955)

[Lindley did not deal specifically with terms relating to the base but included those relevant under B. nos. 122 (*cordatus*), 123 (*auriculatus*), 126 (*sagittatus*), 127 (*hastatus*); C. nos. 154 (*obtusus*), 158 (*truncatus*) above; and under nos. 437 (*peltatus*), 443 (*perfoliatus*) and 444 (*connatus*) below. G. M. Schulze (1953) has provided a useful summary of other terms (Nos. 172-178 below)].

- 166. **Cordatus** (Cordate): having two equal more or less rounded lobes forming a deep sinus at base.
- 167. **Subcordatus** (Subcordate): having two slight lobes and a shallow sinus.
- 168. **Auriculatus** (Auriculate): having two rounded lobes at base which stand out from the rest of the leaf-blade like little ears.
- 169. **Sagittatus** (Sagittate): having two equal pointed more or less triangular lobes at base directed downward.
- 170. **Hastatus** (Hastate): having two equal pointed more or less triangular lobes at base directed outwards.
- 171. **Truncatus** (Truncatus): as if cut straight across.
- 172. **Rotundatus** (Rounded): rounded like an arc of a circle.
- 173. **Obtusus** (Blunt): rounded enough for an angle of 90° to be placed inside.
- 174. **Acutus** (Acute): with sides equally curved convexly to the base, the whole base going within an angle of 90°.
- 175. **Cuneatus** (Wedge-shaped): with straight sides converging at the base which is described as *late cuneatus* when they make an angle of 90° or more, *anguste cuneatus* when they make an angle of less than 90°.

- 176. **Angustatus** (Attenuate): with convex curved sides narrowed gradually and concavely to the base.
- 177. **Cuneato-angustatus** (Cuneate-attenuate): with convex curved sides narrowed abruptly into a straight-sided triangular base.
- 178. **Breve angustatus** (Shortly attenuate), **Brevissime angustatus** (Very shortly attenuate): with a more or less rounded base abruptly extended downward as a very short triangle.

## 2. DIVISION

## E. THE MARGIN

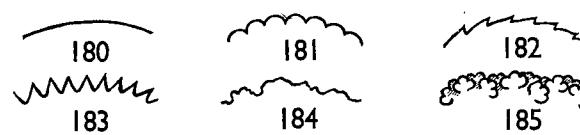


Fig. 25 Types of Margin

180, *integerimus*; 181, *crenatus*; 182, *serratus*; 183, *dentatus*; 184, *erosus*; 185, *crispus*

- 179. **Integer** (Entire): Properly speaking, this means having no kind of marginal division; but sometimes it has been used to indicate not pinnatifid, and also nearly destitute of marginal division.
- 180. **Integerimus** (Quite entire): perfectly free from division of the margin.
- 181. **Crenatus** (Crenated) [the diminutive is *crenulatus*, minutely crenate]; having convex teeth. When these teeth are themselves crenated, we say *bicrenate* [*bicrenatus*].
- 182. **Serratus** (Sawed): having sharp [more or less] straight-edged teeth pointing to the apex. [When the teeth are very small, we say *serrulate* or *serrulatus*.] When these teeth are themselves serrate, we say *biserrate*, or *duplicato-serrate* [or *biserratus*, *duplicato-serratus*].
- 183. **Dentatus** (Toothed): having sharp teeth with concave [or straight] edges [usually pointing directly outwards]. When these teeth are themselves toothed, we say *duplicato-dentate*, or doubly toothed [*duplicato-dentatus*], but not *bidentate*, which means two-toothed. [The diminutive is *denticulatus*, minutely dentate.]
- 184. **Erosus** (Gnawed): having the margin irregularly toothed, as if bitten by some animal.
- 185. **Crispus** (Curled): having the margin excessively irregularly divided and twisted.
- 186. **Repandus** (Repand): having an uneven slightly sinuous margin.
- 187. **Angulatus, angulosus** (Angular): having several salient angles on the margin [see no. 40].
- 188. **Sinuatus** (Sinuate): having the margin uneven, alternately with deep concavities and convexities.

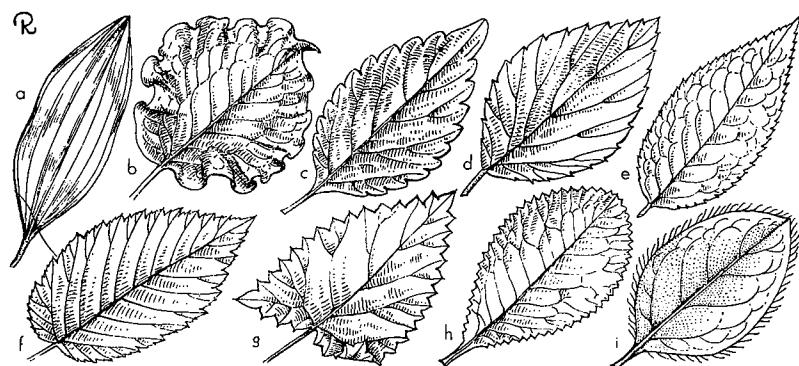


Fig. 26 Types of Margin

a, integer; b, undulatus; c, crenatus; d, serratus; e, serrulatus; f, dupicate-serratus; g, dentatus; h, denticulatus; i, ciliatus (by Marion E. Ruff, from G. H. M. Lawrence, *Introduction to Plant Taxonomy*; 1955)

## F. INCISION

189. **Lacerus** (Torn): irregularly divided by deep incisions.
190. **Incus** (Cut): regularly divided by deep incisions.
191. **Laciñatus** (Slashed): divided by deep, taper-pointed, cut incisions.
192. **Squarroso-laciñatus** (Squarrose-slashed): slashed with minor divisions at right angles with the others.
193. **Lobatus** (Lobed): partly divided into a determinate number of segments. We say *bilobus*, two-lobed; *trilobus*, three-lobed; and so on.
194. **Fissus** (Split): divided nearly to the base, into a determinate number of segments. We say *bifidus*, split in two; *trifidus*, in three; and so on. When the segments are very numerous, *multifidus* is used.
195. **Partitus** (Parted): divided into a determinate number of segments, which extend nearly to the base of the part to which they belong. We say *bipartitus*, parted in two; *tripartitus*, in three; and so on.
196. **Palmatus** (Palmate): having five lobes, the midribs of which meet in a common point, so that the whole bears some resemblance to a human hand.
197. **Pedatus** (Pedate): the same as palmate, except that the two lateral lobes are themselves divided into smaller segments, the midribs of which do not directly run into the same point as the rest.
198. **Digitatus** (Fingered): the same as palmate, but the segments less spreading, and narrower [this distinction between *palmatus* and *digitatus* is obsolete].
199. **Pinnatifidus**, **pinnatipartitus**, **pinnatiscissus** (Pinnatifid): divided almost to the axis into lateral segments, something in the way of the side divisions of a feather. De Candolle distinguishes several modifications of *pinnatifidus*: 1. *Pinnatifidus*, when the lobes are divided

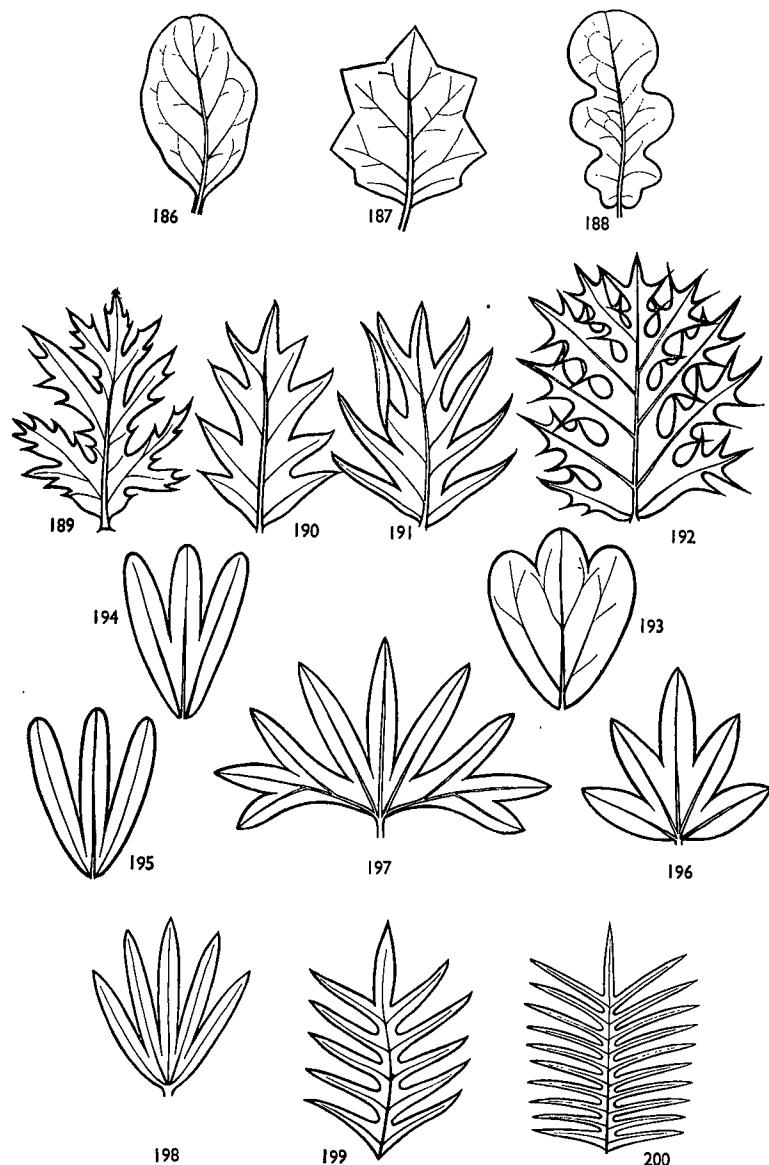


Fig. 27 Shapes of Leaves, etc.

186, repandus; 187, angulatus; 188, sinuatus; 189, lacerus; 190, incus; 191, laciñatus; 192, squarroso-laciñatus; 193, lobatus; 194, fissus; 195, partitus; 196, palmatus; 197, pedatus; 198, digitatus; 199, pinnatifidus; 200, pectinatus (after J. Lindley, *Introduction to Botany*; 1832)

down to half the breadth of the leaf [mostly within the outer  $\frac{1}{2}$ ] ; 2. *pinnatipartitus*, when the lobes pass beyond the middle [or within the middle  $\frac{1}{2}$ ], and the parenchyma is not interrupted ; 3. *pinnatisectus*, when the lobes are divided down to the midrib, and the parenchyma is interrupted ; 4. *pinnatilobatus*, when the lobes are divided to an uncertain depth ; *lyrate* and the like belong to this modification. He has similar variations of *palmatus* and *pedatus* ; *viz.* *palmatifidus*, *pinnatipartitus*, *pinnatisectus*, *pinnatilobatus* ; and *pedatifidus*, *pinnatipartitus*, *pinnatisectus* and *pedatilobatus*.

200. **Pectinatus** (Comb-shaped) : the same as *pinnatifid* ; but the segments very numerous, close and narrow, like the teeth of a comb.

#### G. DIVISION OR RAMIFICATION

201. **Simplex** (Simple) : scarcely divided or branched at all.

202. **Simplicissimus** (Quite simple) : not divided or branched at all.

203. **Compositus** (Compound) : having various divisions or ramifications. As compared with the two following, it applies to cases of leaves in which the petiole is not divided.

204. **Decompositus** (Decompound) : having various compound divisions or ramifications. In leaves it is applied to those the petiole of which bears secondary petioles.

205. **Supradecompositus** (Supradecompound) : having various decompound divisions or ramifications. In leaves it is applied to such as have the primary petiole divided into secondary ones, and the secondary into a third set.

206. **Bifoliolatus, binatus** (Bifoliolate) : when in leaves the common petiole is terminated by two leaflets growing from the same point. This term has the same application as *unijugus* and *conjugatus*. We say *trifoliolate*, or *ternate*, when the petiole bears three leaflets from the same point ; *quadrifoliolate*, if there are four from the same point ; and *quinquefoliolate*, or *quinate*, if there are five from the same point ; and so on.

207. **Vertebratus** (Vertebrate) : when the leaf is contracted at intervals, there being an articulation at each contraction. *Mirb.*

208. **Pinnatus** (Pinnate) : when simple leaflets are arranged on each side of a common petiole.

209. **Imparipinnatus** (Pinnate with an odd one) : when the petiole is terminated by a single leaflet or tendril. If there is a tendril, as in the Pea, it is called *cirrhosus*.

210. **Paripinnatus, abrupte pinnatus** (Equally pinnate) : when the petiole is terminated by neither leaflet nor tendril.

211. **Alternatim pinnatus** (Alternately pinnate) : when the leaflets are alternate upon a common petiole. *Mirb.*

212. **Interrupte pinnatus** (Interruptedly pinnate) : when the leaflets are alternately small and large.

213. **Decrescente pinnatus** (Decreasingly pinnate) : when the leaflets diminish insensibly in size, from the base of the leaf to its apex. *Mirb.*

214. **Decursive pinnatus** (Decursively pinnate) : when the petiole is winged by the elongation of the base of the leaflets. *Mirb.* This is hardly different from *pinnatifid*.

215. **Digitato-pinnatus** (Digitato-pinnate) : when the secondary petioles, on the sides of which the leaflets are attached, part from the summit of a common petiole. *Mirb.*

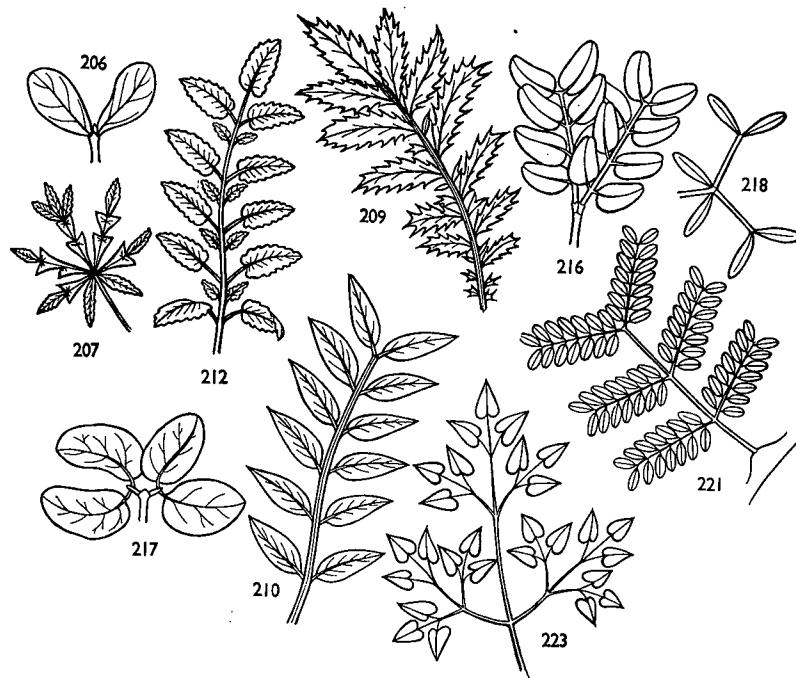


Fig. 28 Division of Leaves  
 206, bifoliolatus ; 207, vertebratus ; 209, imparipinnatus ; 210, paripinnatus ; 212, interrupte pinnatus ; 216, bidigitato-pinnatus ; 217, bigeminatus ; 218, tergeminus ; 221, bipinnatus ; 223, tr ternatus (after J. Lindley, *Introduction to Botany* ; 1832)

216. **Bidigitato-pinnatus, biconjugato-pinnatus** (Twin digitato-pinnate) : the secondary petioles, on the sides of which the leaflets are arranged, proceed in twos from the summit of a common petiole. *Mirb.*

217. **Bigeminatus, biconjugatus** (Bigeminate) : when each of two secondary petioles bears a pair of leaflets. *Mirb.*

218. **Tergeminus, tergeminatus** (Tergeminate) : when each of two secondary petioles bears towards its summit one pair of leaflets, and the common petiole bears a third pair at the origin of the two secondary petioles. *Mirb.*

219. **Tridigitato-pinnatus, ternato-pinnatus** (Thrice digitato-pinnate): when the secondary petioles, on the sides of which the leaflets are attached, proceed in threes from the summit of a common petiole. *Mirb.*

220. **Quadridigitato-pinnatus** and **multidigitato-pinnatus** are rarely used, but are obvious modifications of the last.

221. **Bipinnatus, duplicito-pinnatus** (Bipinnate): when the leaflets of a pinnate leaf become themselves pinnate.

222. **Biernatus, duplicito-ternatus** (Binate): when three secondary petioles proceed from the common petiole, and each bears three leaflets. *Mirb.*

223. **Triternatus** (Terninate): when the common petiole divides into three secondary petioles, which are each subdivided into three tertiary petioles, each of which bears three leaflets.

224. **Triplinatus** (Tripinnate): when the leaflets of a bipinnate leaf become themselves pinnate.

225. **Conjugatus, unijugus, unijugatus** (Paired): when the petiole of a pinnated leaf bears one pair of leaflets. *Bijugus* is when it bears two pairs; *trijugus, quadrijugus, quinquejugus*, etc., are also employed when required. *Multijugus* is used when the number of pairs becomes very considerable.

226. **Ramosus** (Branched): divided into many branches; if the divisions are small, we say *ramulosus*.

227. **Subramosus** (Somewhat branched): having a slight tendency to branch.

228. **Excurrens** (Excurrent): in which the axis remains always in the centre, all the other parts being regularly disposed round it.

229. **Ramosissimus** (Much-branched): branched in a great degree.

230. **Deliquescent** (Disappearing): branched, but so divided that the principal axis is lost trace of in the ramifications; as the head of an oak tree.

231. **Dichotomus** (Dichotomous): having the divisions always in pairs: if they are in threes, we say *trichotomus*.

232. **Didymus** (Twin): growing in pairs, or divided into two equal parts.

233. **Furcatus** (Forked): having long terminal lobes, like the prongs of a fork.

234. **Stellatus** (Stellate): divided into segments, radiating from a common centre; as the hairs of most malvaceous plants.

235. **Articulatus** (Jointed): falling in pieces at the joints, or separating readily at the joints: it is also applied to bodies having the appearance of being jointed.

236. **Granulatus** (Granular): divided into little knobs or knots.

237. **Byssaceus** (Byssaceous): divided into very fine pieces, like wool.

238. **Dendroideus** (Tree-like): divided at the top into a number of fine ramifications so as to resemble the head of a tree.

239. **Aspergilliformis** (Brush-shaped): divided into several fine ramifications, so as to resemble the brush (*aspergillus*) used for sprinkling holy water in the ceremonies of the Catholic Church.

240. **Loculosus, septatus** (Partitioned): divided by internal partitions into cells.

241. **Anastomozans** (Anastomosing): the ramifications of any thing which are united at the points where they come in contact are said to anastomose. The term is confined to veins.

242. **Ruminatus** (Ruminant): when a hard body is pierced in various directions by narrow cavities filled with dry cellular matter.

243. **Cancellatus** (Cancellate): when the parenchyma is wholly absent, and the veins alone remain, anastomosing and forming a kind of network.

244. **Pertusus** (Perforated): when irregular spaces are left open in the surface of any thing, so that it is pierced with holes.

### 3. SURFACE

#### H. MARKINGS OR EVENNESS

[A glossary of terms for the surfaces of fungi in particular is provided by Murrill (1905), for the surface of seeds in particular by Murley (1951); see p. 507.]

245. **Rugosus** (Rugose): covered with reticulated lines, the spaces between which are convex; [wrinkled, the elevations irregular].

246. **Reticulatus** (Netted): covered with reticulated lines which project a little.

247. **Semireticulatus** (Half-netted): when, of several layers of any thing, the outer one only is reticulated.

248. **Scrobiculatus** (Pitted): having numerous small shallow depressions or excavations.

249. **Lacunous** (Lacunose): having numerous large deep depressions or excavations.

250. **Favosus, alveolatus** (Honeycombed): excavated in the manner of a section of honeycomb.

251. **Areolatus** (Areolate): divided into a number of irregular squares or angular spaces.

252. **Cicaticatus** (Scarred): marked by the scars left by bodies that have fallen off; the stem, for instance, is scarred by the leaves that have fallen.

253. **Annulatus** (Ringed): surrounded by elevated or depressed bands.

254. **Striatus** (Striated): marked by longitudinal lines.

255. **Lineatus** (Lined): the same as striatus.

256. **Sulcatus** (Furrowed): marked by longitudinal channels.

257. **Aciculatus** (Aciculated): marked with very fine irregular streaks, as if produced by the point of a needle.

258. **Punctatus** (Dotted): covered by minute impressions, as if made by the point of a pin.

259. **Aequatus** (Even): the reverse of any thing expressive of inequality of surface.

## J. HAIR-COVERING AND SUPERFICIAL PROCESSES

[The nature of hair-covering is determined by the length, direction, form and quantity of the hairs together, and for precision these characters should be stated individually, as plants possess more types of hair-covering than there exist special terms to designate them, hence the uncertain and overlapping use of many terms, even though their main meanings are clear (cf. Forbes, 1884; Lawrence, 1955; Roe, 1971).]

260. **Inermis** (Unarmed): destitute of any kind of spines or prickles.
261. **Spinosus** (Spiny): furnished with spines.
262. **Aculeatus** (Prickly): furnished with prickles.
263. **Echinatus** (Bristly): furnished with numerous rigid hairs, or straight prickles.
264. **Muricatus** (Muricated): furnished with numerous short hard excrescences.
265. **Spiculatus** (Spiculate): covered with fine, fleshy, erect points.
266. **Scaber, asper, exasperatus** (Rough): covered with hard short, rigid points.
267. **Scabridus** (Roughish): slightly covered with short hardish points.
268. **Tuberculatus, verrucosus** (Tuberclered): covered with little excrescences or warts.
269. **Papillosus, papulosus** (Pimpled): covered with minute tubercles or excrescences, of uneven size, and rather soft.
270. **Pilosus** (Hairy): covered with short, weak, thin hairs; as the leaf of *Prunella vulgaris*, *Daucus Carota*.
271. **Pubens, pubescens** (Downy): covered with very short, weak, dense hairs; as the leaves of *Cynoglossum officinale*, *Lonicera Xystotheum*, etc. *Pubescens* is most commonly employed in Botany, but *pubens* is more classical.
272. **Incanus** (Hoary): covered with very short dense hairs, placed so closely as to give an appearance of whiteness to the surface from which they grow; as the leaf of *Mathiola incana*.
273. **Hirtus, villosus** (Shaggy): covered with long weak hairs; as *Epilobium hirsutum*.
274. **Tomentosus** (Tomentose): covered with dense, rather rigid, short hairs, so as to be sensibly perceptible to the touch; as *Onopordum Acanthium*, *Lavatera arborea*, etc.
275. **Velutinus** (Velvety): the same as the last, but more dense so that the surface resembles that of velvet; as *Cotyledon coccineus*.
276. **Lanatus** (Woolly): covered with long, dense, curled, and matted hairs, resembling wool; as *Verbascum Thapsus*, *Stachys germanica*.
277. **Hispidus** (Hispid): covered with long rigid hairs; as the stem of *Echium vulgare*.
278. **Floccosus** (Floccose): covered with dense hairs, which fall away in little tufts; as *Verbascum floccosum*, and *pulverulentum*.
279. **Glandulosus** (Glandular): covered with hairs bearing glands upon their tips; as the fruit of *Roses*, the pods of *Adenocarpus*.

280. **Barbatus, crinitus** (Bearded): having tufts of long weak hairs growing from different parts of the surface. It is also applied to bodies bearing very long weak hairs in solitary tufts or parcels.
281. **Strigosus** (Strigose): covered with sharp, appressed, rigid hairs. *W.* Linnaeus considers this word synonymous with *hispid*.
282. **Sericus** (Silky): covered with very fine close-pressed hairs, silky to the touch; as the leaves of *Protea argentea*, *Alchemilla alpina*, etc.
283. **Peronatus** (Peronate): laid thickly over with a woolly substance, ending in a sort of meal. *W.* This term is only applied to the stipes of *Fungi*.
284. **Arachnoideus** (Cobwebbed): covered with loose, white, entangled, thin hairs, resembling the web of a spider; as *Calceolaria arachnoidea*.
285. **Ciliatus** (Ciliated): having fine hairs, resembling the eyelash, at the margin; as the leaves of *Luzula pilosa*, *Erica Tetralix*, etc.
286. **Fimbriatus** (Fringed): having the margin bordered by long filiform processes thicker than hairs; as the petals of *Cucubalus fimbriatus*.
287. **Plumosus** (Feathery): consisting of long hairs, which are themselves hairy; as the pappus of *Leontodon Taraxacum* [*Taraxacum officinale*], the beard of *Stipa pennata*.
288. **Urens** (Stinging): covered with rigid, sharp-pointed, bristly hairs, which emit an irritating fluid when touched; as the leaves of the *Urtica urens*.
289. **Farinosus** (Mealy): covered with a sort of white scurfy substance.
290. **Lepidotus, leprosus** (Leprous): covered with minute peltate scales.
291. **Ramentaceus** (Ramentaceous): covered with weak, shrivelled, brown, scale-like processes.
292. **Squamatus** (Scaly): covered with minute scales, fixed by one end.
293. **Paleaceus** (Chaffy): covered with small, weak, erect, membranous scales, resembling the paleae of *Grasses*.

## K. POLISH OR TEXTURE

294. **Nitidus** (Shining): having a smooth, even, polished surface; as many leaves.
295. **Laevis, glaber** (Smooth): being free from asperities [*laevis*] or hairs [*glaber*], or any sort of unevenness [*glabratus*, become glabrous having been otherwise, *glabrescens*, becoming glabrous].
296. **Laevigatus, politus** (Polished): having the appearance of a polished substance.
297. **Splendens** (Glittering): the same as polished, but when the lustre is a little broken, from slight irregularity of surface.
298. **Nudus, denudatus** (Naked): the reverse of hairy, downy, or any similar term; it is not materially different from *glaber*.
299. **Opacus, impolitus** (Opaque): the reverse of shining, dull.
300. **Viscidus, glutinosus** (Viscid): covered with a glutinous exudation.
301. **Mucosus** (Mucous or slimy): covered with a slimy secretion; or with a coat that is readily soluble in water, and becomes slimy.
302. **Unctuosus** (Greasy): having a surface which, though not actually greasy, feels so.

303. *Roridus* (Dewy): covered with little transparent elevations of the parenchyma which have the appearance of fine drops of dew.

304. *Lentiginosus* (Dusty): covered with minute dots, as if dusted.

305. *Pruinosus* (Frosted): nearly the same as *roridus*, but applied to surfaces in which the dewy appearance is more opaque, as if the drops were congealed.

306. *Pulverulentus* (Powdery): covered with a fine bloom or powdery matter.

307. *Glaucus* (Glaucous): covered with a fine bloom of the colour of a Cabbage leaf.

308. *Caesius* (Caesious): like glaucous, but greener.

309. *Dealbatus* (Whitened): covered with a very opaque white powder.

#### 4. TEXTURE OR SUBSTANCE

310. *Membranaceus* (Membranaceous): thin and semitransparent, like a fine membrane; as the leaves of Mosses.

311. *Papyraceus, chartaceus* (Papery): having the consistence of writing-paper, and quite opaque; as most leaves.

312. *Coriaceus* (Leathery): having the consistence of leather; as the leaves of *Prunus Laurocerasus*, and others.

313. *Crustaceus* (Crustaceous): hard, thin and brittle.

314. *Cartilagineus* (Cartilaginous): hard and tough.

315. *Laxus* (Loose): of a soft cellular texture, as the pith of most plants. The name is derived from the parts of the substance appearing as if not in a state of cohesion.

316. *Scariosus* (Scarious): having a thin, dry, shrivelled appearance.

317. *Suberosus* (Corky): having the texture of the substance called cork.

318. *Corticatus* (Coated): harder externally than internally.

319. *Spongiosus* (Spongy): having the texture of a sponge; that is to say, very cellular, with the cellules filled with air.

320. *Corneus* (Horny): hard, and very close in texture, but capable of being cut without difficulty, the parts cut off not being brittle.

321. *Oleaginosus* (Oleaginous): fleshy in substance, but filled with oil.

322. *Osseus* (Bony): hard, and very close in texture, not cut without difficulty, the parts cut off being brittle.

323. *Carnosus* (Fleshy): firm, juicy, easily cut.

324. *Ceraceus, cereus* (Waxy): having the texture and colour of new wax.

325. *Lignosus, ligneus* (Woody): having the texture of wood.

326. *Crassus* (Thick): something more thick than usual. Leaves, for instance, are generally papery in texture; the leaves of cotyledons, which are much more fleshy, are called *thick*.

327. *Succulentus* (Succulent): very cellular and juicy.

328. *Gelatinosus* (Gelatinous): having the texture and appearance of jelly.

329. *Fibrosus* (Fibrous): containing a great proportion of loose woody fibre.

330. *Medullosus* (Medullary or pithy): filled with spongy pith.

331. *Farinaceus* (Mealy): having the texture of flour in a mass.

332. *Tartareus* (Tartareous): having a rough crumbling surface.

333. *Baccatus* (Berried): having a juicy succulent texture.

334. *Herbaceus* (Herbaceous): thin, green and cellular; as the tissue of membranous leaves.

#### 5. SIZE

Most of the terms which relate to this quality are the same as those in common use; and, being employed in precisely the same sense, do not need explanation. But there are a few which have a particular meaning attached to them, and are not much known in common language. These are :

335. *Nanus, pumilus, pygmaeus* (Dwarf): small, short, dense, as compared with other species of the same genus, or family. Thus, *Myosotis nana* is not more than half an inch high; while the other species are much taller.

336. *Pusillus, perpusillus* (Very small): the same as the last, except that a general reduction of size is understood, as well as dwarfishness.

337. *Humilis* (Low): when the stature of a plant is not particularly small, but much smaller than of other kindred species. Thus, a tree twenty feet high may be *low*, if the other species of its genus are forty or fifty feet high.

338. *Depressus* (Depressed): broad and dwarf, as if, instead of growing perpendicularly, the growth had taken place horizontally.

339. *Exiguus* (Little): this is generally used in opposition to large, and means small in all parts, but well proportioned.

340a. *Elatus, procerus* (Tall): this is said of plants which are taller than their parts would have led one to expect.

340b. *Exaltatus* (Lofty): the same as the last, but in a greater degree.

341. *Giganteus* (Gigantic): tall, but stout and well proportioned.

#### 6. DURATION

342. [Terms expressive of life-span include *monocarpus* or *hapaxanthus* (bearing fruit but once and then dying after fructification) of which there are three forms: *annuus* (annual, living but one year), *biennis* (biennial, living two years, or within two calendar years), *plantesialis* (requiring several or many years to reach the flowering state, then dying immediately after fruiting), these being distinguished from *polycarpicus* (having the power of bearing fruit many times without perishing) or *perennis* (perennial, lasting for several or many years). The terms expressive of the duration of parts include *caducus* (falling

off very early), *deciduus* (deciduous, finally falling off), *persistens* (persistent, neither falling off nor withering until the part which bears it is perfected), *marcescens* (withering or fading, not falling until the part which bears it is perfected but withering long before that time), *fugax* (fugacious, falling off or perishing very rapidly).]

### 7 & 8. COLOUR AND VARIEGATION

[For colour terms adopted by Lindley, see Chapter XVIII.]

### 9. VEINING

[Arising out of the need to describe fossil leaves and leaf-impressions, C. von Ettingshausen introduced in 1861 a more precise terminology, which is outlined in the vocabulary Chapter XXV under Veining.]

In terms expressive of this quality the word nerves is generally used, but very incorrectly.

- 343. **Nervosus, nervatus** (Ribbed): having several ribs.
- 344. **Uninervis, costatus** (One-ribbed): when there is only one rib as in most leaves.
- 345. **Trinervis** (Three-ribbed): when there are three ribs all proceeding from the base; *Quinquenervis*, when there are five; *Septemnervis*, when there are seven; and so on.
- 346. **Triplinervis** (Triple-ribbed): when of three ribs the two lateral ones emerge from the middle one a little above its base; *Quintuplinervis* [five-ribbed], etc., are used to express the obvious modifications of this.
- 347. **Indirecte venosus**: when the lateral veins are combined within the margin and emit other little veins. *Link*.
- 348. **Evanescenti-venosus**: when the lateral veins disappear within the margin. *Id.*
- 349. **Combinata venosus**: when the lateral veins unite before they reach the margin. *Id.*
- 350. **Rectinervis, parallelinervis** (Straight-ribbed): when the lateral ribs are straight. *Mirb.* When the ribs are straight and almost parallel, but united at the summit. *De Cand.*
- 351. **Curvinervis, converginervis** (Curve-ribbed): when the ribs describe a curve, and meet at the point.
- 352. **Ruptinervis**: when a straight-ribbed leaf has its ribs interrupted at intervals. *De Cand.*
- 353. **Penniformis**: when the ribs are disposed as in a pinnated leaf, but confluent at the point. *Id.*
- 354. **Palmiformis**: when the ribs are arranged as in palmate leaves. *Id.*
- 355. **Penninervis**: when the ribs are pinnated. *Id.*
- 356. **Pedatinervis**: when the ribs are pedate. *Id.*

- 357. **Palminervis**: when they are palmated. *Id.*
- 358. **Peltinervis**: when they are peltate. *Id.*
- 359. **Vaginervis**: when the veins are arranged without any order; as in Ficoideae. *Id.*
- 360. **Retinervis**: when the veins are reticulated, or like lace. *Id.*
- 361. **Nullinervis, enervis**: when there are no ribs or veins whatever. *Id.*
- 362. **Falsinervis**: when the veins have no vascular tissue, but are formed of simple, elongated, cellular tissue; as in Mosses, Fuci, etc.
- 363. **Hinoideus**: when all the veins proceed from the midrib, and are parallel and undivided. *Link.* When they are connected by little cross veins, the term is *venuloso-hinoideus*. *Id.*
- 364. **Venosus**: when the lateral veins are variously divided. *Id.* [When the veins are prominent on the leaf surface.]

[For angles of divergence of veins, see p. 540. Otto Berg in *Flora Brasiliensis* 14.i : 3 (1857), describing leaves of *Myrtaceae*, used *arrectus* for veins diverging at 5-30°, *subpatens* for about 40°, *patens* for 45°, *suberecto-patulus* for 50°, *subpatulus* for 70°, *patulus* for 75°, *subdivaricatus* for 80°, *divaricatus* for 90°.]

### OF INDIVIDUAL RELATIVE TERMS

These are arranged under the heads of *Aestivation*, or the relation which organs bear to each other in the bud state; *Direction*, or the relation which organs bear to the surface of the earth, or to the stem of the plant which forms the axis, either real or imaginary, round which they are disposed; and *Insertion*, or the manner in which one part is inserted into, or adheres to, another.

### 10. AESTIVATION AND VERNATION

The term *aestivation*, or *prae floration*, is applied to the parts of the flower when unexpanded; and *vernation* is expressive of the foliage in the same state. The ideas of their modifications are, however, essentially the same.

- 365. **Involutiva, involuta** (Involute): when the edges are rolled inwards spirally on each side (*Link*); as the leaf of the Apple.
- 366. **Revolutiva, revoluta** (Revolute): when the edges are rolled backwards spirally on each side (*Link*); as in the leaf of the Rosemary.
- 367. **Obvolutiva, obvoluta**, *Link*; *semi-amplexa*, *De Cand.* (*Obvolute*): when the margins of one alternately overlap those of that which is opposite to it.
- 368. **Convolutiva, convoluta** (Convolute): when one is wholly rolled up in another, as in the petals of the Wallflower.
- 369. **Supervolutiva** (*Supervolute*): when one edge is rolled inwards, and is enveloped by the opposite edge rolled in an opposite direction; as the leaves of the Apricot.

370. **Induplicativa** (Induplicate): having the margins bent abruptly inwards, and the external face of these edges applied to each other without any twisting; as in the flowers of some species of *Clematis*.

371. **Conduplicativa, conduplicata** (Conduplicate): when the sides are applied parallelly to the faces of each other.

372. **Plicativa, plicata** (Plaited): folded lengthwise, like the plaits of a closed fan; as in the Vine and many Palms.

373. **Replicativa** (Replicate): when the upper part is curved back and applied to the lower; as in the Aconite.

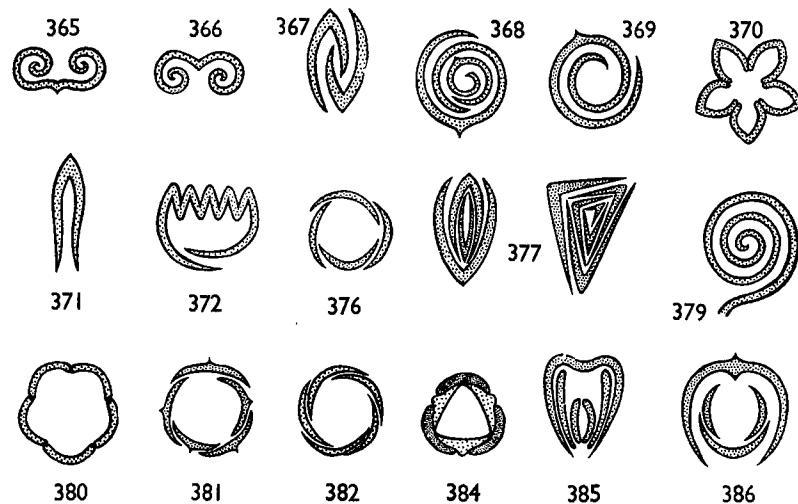


Fig. 29 Types of Aestivation and Vernation

365, involuta; 366, revoluta; 367, obvoluta; 368, convoluta; 369, supervoluta; 370, induplicativa; 371, conduplicata; 372, plicata; 376, imbricata; 377, equitativa; 379, circinata; 380, valvata; 381, quincuncialis; 382, torsiva; 384, alternativa; 385, vexillaris; 386, cochlearis (after J. Lindley, *Introduction to Botany*; 1832)

374. **Curvativa** (Curvative): when the margins are slightly curved, either backwards or forwards, without any sensible twisting. *De Cand.*

375. **Corrugata, corrugativa** (Wrinkled): when the parts are folded up irregularly in every direction; as the petals of the Poppy.

376. **Imbricativa, imbricata** (Imbricated): when they overlap each other parallelly at the margins, without any involution. This is the true meaning of the term. *De Candolle* applies it in a different sense (*Théorie*, ed. 1, p. 399).

377. **Equitativa, equitans, Link; amplexa, De Cand.** (Equitant): when they overlap each other parallelly and entirely, without any involution.

378. **Reclinata** (Reclinate): when they are bent down upon their stalk.

379. **Circinata** (Circinate): when they are rolled spirally downwards.

380. **Valvata, valvaris** (Valvate): applied to each other by the margins only.

381. **Quincuncialis** (Quincunx): when the pieces are five in number, of which two are exterior, two interior and the fifth covers the interior with one margin, and has its other margin covered by the exterior.

382. **Torsiva, spiraliter contorta** (Twisted): the same as contorted, except that there is no obliquity in the form or insertion of the pieces. [For the direction of overlap expressed by the terms *dextrorum* (to the right) and *sinistrorum* (to the left) see below under no. 418 (*Volubilis*).]

383. **Contorta** (Contorted): each piece being oblique in figure, and overlapping its neighbour by one margin, its other margin being, in like manner, overlapped by that which stands next it.

384. **Alternativa** (Alternative): when, the pieces being in two rows, the inner is covered by the outer in such a way that each of the exterior rows overlap half of two of the interior.

385. **Vexillaris** (Vexillary): when one piece is much larger than the others, and is folded over them, they being arranged face to face.

386. **Cochlearis** (Cochlear): when one piece, being larger than the others, and hollowed like a helmet or bowl, covers all the others.

## 11. DIRECTION

387. **Erectus, arrectus** (Erect): pointing towards the zenith.

388. **Rectus** (Straight): not wavy or curved, or deviating from a straight direction in any way.

389. **Strictus** (Very straight): the same as the last, but in excess.

390. **Natans** (Swimming): floating under water.

391. **Fluitans** (Floating): floating upon the surface of water.

392. **Submersus, demersus** (Submersed): buried beneath water.

393. **Descendens** (Descending): having a direction gradually downwards.

394. **Dependens** (Hanging down): having a downward direction, caused by its weight.

395. **Ascendens, assurgens** (Ascending): having a direction upwards, with an oblique base.

396. **Verticalis, perpendicularis** (Perpendicular): being at right angles with some other body.

397. **Obliquus** (Oblique): when the margin points to the heavens, the apex to the horizon.

398. **Horizontalis** (Horizontal): when the plane points to the heavens, the apex to the horizon.

399. **Inversus** (Inverted): having the apex of one thing in an opposite direction to that of another.

400. **Revolutus** (Revolute): rolled backwards from the direction ordinarily assumed by similar other bodies; as certain tendrils, and the ends of some leaves.

401. **Involutus** (Involute): rolled inwards.

402. **Convolutus** (Convolute): rolled up.

403. **Reclinatus** (Reclining): falling gradually back from the perpendicular.

404. **Resupinatus** (Resupinate): inverted in position by a twisting of the stalk.

405. **Inclinatus, declinatus** (Inclining): the same as reclining, but in a greater degree.

406. **Pendulus** (Pendulous): hanging downwards, in consequence of the weakness of its support.

407. **Cernuus** (Drooping): inclining a little from the perpendicular, so that the apex is directed towards the horizon.

408. **Nutans** (Nodding): inclining very much from the perpendicular, so that the apex is directed downwards.

409. **Secundus** (One-sided): having all the parts by twists in their stalks turned one way.

410. **Inflexus, curvus, introflexus, introcurvus, infractus** (Inflexed): suddenly bent inwards.

411. **Reflexus, recurvus, retroflexus, retrocurvus, refractus** (Reflexed): suddenly bent backwards.

412. **Deflexus, declinatus** (Deflexed): bent downwards.

413. **Flexuosus** (Flexuose): having a gently bending direction, alternately inwards and outwards.

414. **Tortuosus** (Tortuous): having an irregular, bending and turning direction.

415. **Geniculatus** (Knee-jointed): bent abruptly like a knee.

416. **Spiralis, anfractuosus** (Spiral): resembling in direction the spires of a corkscrew, or other twisted thing.

417. **Circinatus, gyratus, circinalis** (Circinate): bent like the head of a crosier.

418. **Volubilis** (Twining): having the property of twisting round some other body:

- a. To the right hand (*dextrorsum [e centro vis., intus vis.]*): when the twisting is from left to right, or in the direction of the sun's course; as the Hop [Humulus].
- b. To the left hand (*sinistrorsum [e centro vis., intus vis.]*): when the twisting is from right to left, or opposite to the sun's course; as *Convolvulus sepium*.

[These terms as given above are used by the de Candolles, Bischoff, Hiern, etc. They are reversed by those, e.g. Eichler, Duchartre, A. Gray, etc., who regard the observer not as placed within the spiral but looking at it from outside; a is then *sinistrorsum externe vis.*, b is *dextrorsum externe vis.*; cf. B. D. Jackson, *Glossary*, 4th ed., p. 477.]

419. **Retrorsus** (Turned backwards): turned in a direction opposite to that of the apex of the body to which the part turned appertains.

420. **Introrsus, anticus** (Turned inwards): turned towards the axis to which it appertains.

421. **Extrorsus, posticus** (Turned outwards): turned away from the axis to which it appertains.

422. **Procumbens, humifusus** (Procumbent): spread over the surface of the ground.

423. **Prostratus, pronus** (Prostrate): lying flat upon the earth, or any other thing.

424. **Decumbens** (Decumbent): reclining upon the earth, and rising again from it at the apex.

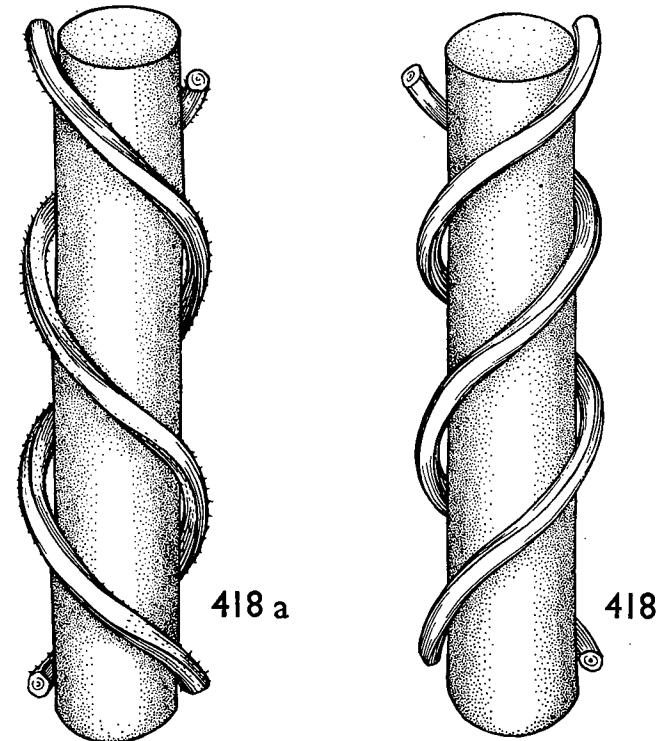


Fig. 30 Direction of Twining

418a, *dextrorsum volubilis e centro visus* (*sinistrorsum externe visus*);  
 418b, *sinistrorsum volubilis e centro visus* (*dextrorsum externe visus*)  
 (drawing by Priscilla Fawcett)

425. **Diffusus** (Diffuse): spreading widely.

426. **Divaricatus** (Straggling): turning off from any thing irregularly, but at almost a right angle; as the branches of many things.

427. **Brachiatus** (Brachiate): when ramifications proceed from a common axis nearly at regular right angles, alternately in opposite directions.

428. **Patens** (Spreading): having a gradually outward direction; as petals from the ovary.

429. **Connivens** (Converging): having a gradually inward direction; as many petals.

430. **Adversus** (Opposite): pointing directly to a particular place; as the radicle to the hilum.

431. **Vagus** (Uncertain): having no particular direction.

432. **Peritropus** (Peritropal): directed from the axis to the horizon. This and the four following are only applied to the embryo of the seed.

433. **Orthotropus** (Orthotropal): straight, and having the same direction as the body to which it belongs.

434. **Antitropus** (Antitropal): straight, and having a direction contrary to that of the body to which it belongs.

435. **Amphitropus** (Amphitropal): curved round the body to which it belongs.

436. **Homotropus** (Homotropal): having the same direction as the body to which it belongs, but not being straight.

## 12. INSERTION

### A. WITH RESPECT TO THE MODE OF ATTACHMENT OR ADHESION

437. **Peltatus, umbilicatus** (Peltate): fixed to the stalk by the centre, or by some point distinctly within the margin. [Cf. Fig. 24, no. 437.]

438. **Sessilis** (Sessile): sitting close upon the body that supports it, without any sensible stalk. [Cf. Fig. 24, no. 175.]

439. **Decurrens, decursivus** (Decurrent): prolonged below the point of insertion, as if running downwards.

440. **Amplexens** (Embracing): clasping with the base.

441. **Amplexicaulis** (Stem-clasping): the same as the last, but applied only to stems.

442. **Semi-amplexicaulis** (Half-stem-clasping): the same as the last, but in a smaller degree.

443. **Perfoliatus** (Perfoliate): when the two basal lobes of an amplexicaul leaf are united together, so that the stem appears to pass through the substance of the leaf. [Cf. Fig. 24, no. 443.]

444. **Connatus** (Connate): when the bases of two opposite leaves are united together. [Cf. Fig. 24, no. 444.]

445. **Vaginans** (Sheathing): surrounding a stem or other body by the convolute base; this chiefly occurs in the petioles of Grasses.

446. **Adnatus, annexus** (Adnate): adhering to the face of a thing.

447. **Innatus** (Innate): adhering to the apex of a thing.

448. **Versatilis, oscillatorius** (Versatile): adhering slightly by the middle, so that the two halves are nearly equally balanced, and swing backwards and forwards.

449. **Stipitatus** (Stipitate): elevated on a stalk which is neither a petiole nor a peduncle.

450. **Palaceus** (Palaceous): when the foot-stalk adheres to the margin. *Willd.* [Used in contrast to *peltatus*, no. 437; cf. Fig. 24, no. 171, etc.]

451. **Liber, solitus, distinctus** (Separate): when there is no cohesion between parts.

452. **Accretus** (Accrete): fastened to another body, and growing with it. *De Cand.*

453. **Adhaerens** (Adhering): united laterally by the whole surface with another organ. *De Cand.*

454. **Cohaerens, coadnatus, coadunatus, coalitus, connatus, confluens** (Cohering): this term is used to express, in general, the fastening together of homogeneous parts. *De Cand.* Such are De Candolle's definitions of these three terms [nos. 452-454]; but in practice there is no difference between them.

455. **Articulatus** (Articulated): when one body is united with another by a manifest articulation.

### B. WITH RESPECT TO SITUATION

456. **Dorsalis** (Dorsal): fixed upon the back of any thing.

457. **Lateralis** (Lateral): fixed near [or upon] the side of any thing.

458. **Marginalis** (Marginal): fixed upon the edge of any thing.

459. **Basilaris** (Basal): fixed at the base of any thing.

460. **Radicalis** (Radical): arising from the root.

461. **Caulinus** (Cauline): arising from the stem.

462. **Rameus, ramealis** (Rameous): of or belonging to the branches.

463. **Axillaris, alaris** (Axillary): arising out of the axilla.

464. **Floralis** (Floral): of or belonging to the flower.

465. **Foliaris, epiphyllus** (Epiphyllous): inserted upon the leaf.

466. **Terminalis** (Terminal): proceeding from the end.

467. **Petiolaris** (Of the leaf-stalk): inserted upon the petiole.

468. **Coronans** (Crowning): situated on the top of any thing. Thus, the limbs of the calyx may crown the ovary; a gland at the apex of the filament may crown the stamen; and so on.

469. **Epigaeus** (Epigeous): growing close upon the earth.

470. **Hypogaeus, subterraneus** (Subterranean): growing under the earth.

471. **Amphigenus** (Amphigenous): growing all round an object.

472. **Epigynus** (Epigynous): growing upon the summit of the ovarium.

473. **Hypogynus** (Hypogynous): growing from below the base of the ovarium.

474. **Perigynus** (Perigynous): growing upon some body that surrounds the ovarium.

### CLASS II. COLLECTIVE TERMS

It has been already explained, that collective terms are those which apply to plants, or their parts, considered in masses; by which is meant that they cannot be applied to any one single part or thing, without a reference to a larger number being either expressed or

understood. Thus, when leaves are said to be *opposite*, that term is used with respect to several, and not to one; and when a panicle is said to be *lax*, or *loose*, it means that the flowers of a panicle are loosely arranged; and so on.

## 13. ARRANGEMENT

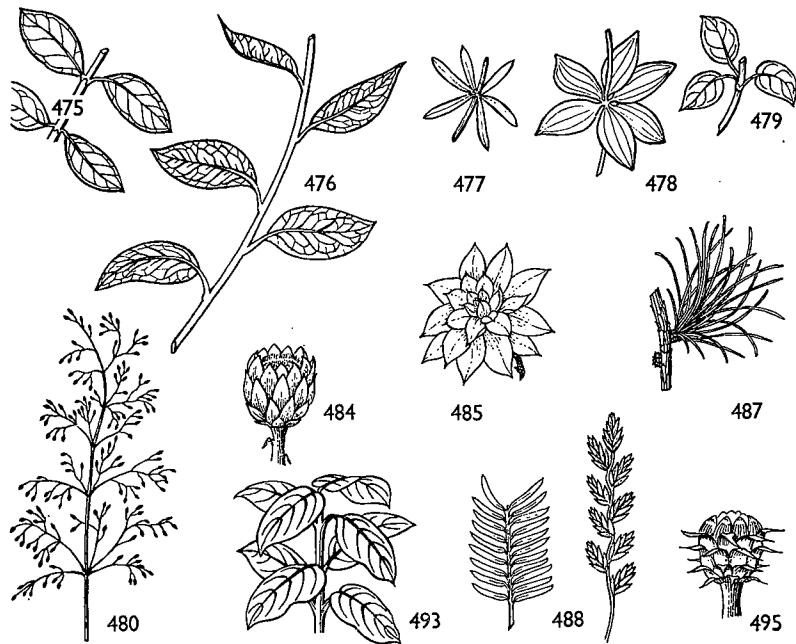
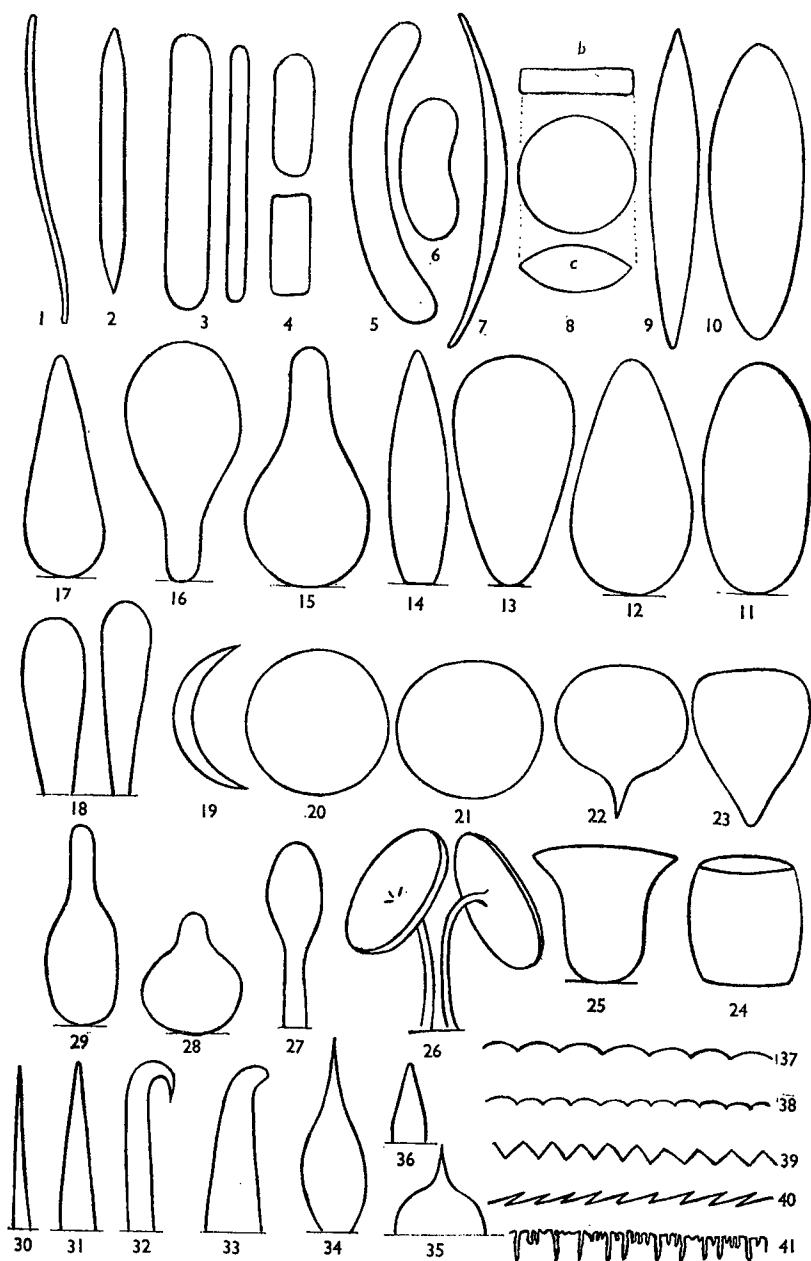


Fig. 31 Arrangement of Leaves, etc.

475, *oppositus*; 476, *alternus*; 477, *stellatus* (*verticillatus foliis angustis*); 478, *verticillatus*; 479, *ternatus*; 480, *laxus*; 484, *imbricatus*; 485, *rosulatus*; 487, *fasciculatus*; 488, *distichus*; 493, *decussatus*; 495, *squarrosus* (drawing by Gisena B. Threlkeld)

- 475. **Oppositus** (*Opposite*): placed on opposite sides of some other body or thing on the same plane. Thus, when leaves are opposite, they are on opposite sides of the stem; when petals are opposite, they are on opposite sides of the ovary; and so on.
- 476. **Alternus** (*Alternate*): placed alternately one above the other on some common body, as leaves upon the stem.
- 477. **Stellatus, stelliformis, stellulatus** (*Stellate*): the same as *verticillate*, except that the parts are narrow and acute.
- 478. **Verticillatus** (*Whorled*): when several things are in opposition round

- a common axis, as some leaves round their stem; sepals, petals and stamens round the ovary, etc.
- 479. **Ternus** (*Ternate*): when three things are in opposition round a common axis.
- 480. **Laxus** (*Loose*): when the parts are distant from each other, with an open light kind of arrangement; as the panicle among the other kinds of inflorescence.
- 481. **Sparsus** (*Scattered*): used in opposition to *whorled*, or *opposite*, or *ternate*, or other such terms.
- 482. **Compositus** (*Compound*): when formed of several parts united in one common whole; as pinnated leaves, all kinds of inflorescence beyond that of the solitary flower.
- 483. **Confertus** (*Crowded*): when the parts are pressed closely round about each other.
- 484. **Imbricatus** (*Imbricated*): when parts lie over each other in regular order, like tiles upon the roof of a house.
- 485. **Rosulatus, rosularis** (*Rosulate*): when parts which are not opposite, nevertheless become apparently so by the contraction of the joints of the stem, and lie packed closely over each other, like the petals in a double rose; as in the offsets of *Houseleek*.
- 486. **Caespitosus** (*Caespitose*): forming dense patches, or turfs; as the young stems of many plants.
- 487. **Fasciculatus** (*Fascicled*): when several similar things proceed from a common point.
- 488. **Distichus, bifarius** (*Distichous*): when things are arranged in two rows, the one opposite to the other.
- 489. **Serialis** (*In rows*): arranged in rows which are not necessarily opposite each other: *biserialis*, in two rows; *triserialis*, in three rows: but these are seldom used. In their stead, we generally add *fariam* to the end of a Latin numeral: thus, *bifariam* means in two rows; *trifariam*, in three rows; and so on.
- 490. **Unilateralis, secundus** (*One-sided*): arranged on, or turned towards, one side only.
- 491. **Aggregatus, coacervatus, conglomeratus** (*Clustered*): collected in parcels, each of which has a roundish figure.
- 492. **Spiralis** (*Spiral*): arranged in a spiral manner round some common axis.
- 493. **Decussatus** (*Decussate*): arranged in pairs that alternately cross each other; as the leaves of many plants.
- 494. **Fastigiatus** (*Fastigiate*): when all the parts are nearly parallel, with each pointing upwards to the sky.
- 495. **Squarrosus** (*Squarrose*): when the parts spread out at right angles, or thereabouts, from a common axis.
- 496. **Fasciatus** (*Fasciated*): when several contiguous parts grow unnaturally together into one.
- 497. **Squamulosus** (*Scaly*): covered with small scales, like leaves.
- 498. **Depauperatus** (*Starved*): when some part is less perfectly developed



than is usual with plants of the same family. Thus, when the lower scales of a head of a Cyperaceous plant produce no flowers, such scales are said to be starved.

499. **Distans, remotus, rarus** (Distant): in contradiction to imbricated, or dense, or approximated, or any such words.

500. **Interruptus** (Interrupted): when any symmetrical arrangement is destroyed by local causes, as, for example, a spike is said to be interrupted when here and there the axis is unusually elongated, and not covered with flowers; a leaf is interruptedly pinnated when some of the pinnae are much smaller than the others, or wholly wanting; and so on.

501. **Continuus** (Continuous or uninterrupted): the reverse of the last.

502. **Intricatus** (Entangled): when things are intermixed in such an irregular manner that they cannot be readily disentangled; as the hairs, roots, and branches of many plants.

503. **Duplicatus, geminatus** (Double or twin): growing in pairs.

504. **Rosaceus** (Rosaceous): having the same arrangement as the petals of a single rose.

505. **Radiatus** (Radiant): diverging from a common centre, like rays; as the ligulate florets of any compound flower.

## INDEX

When a Latin term and its English equivalent are almost identical, as *cylindricus* and 'cylindrical', *ovoideus* and 'ovoid', usually the Latin term alone is indexed below, but when they are markedly different, as *fusiformis* and 'spindle-shaped', both are indexed.

ABNORMALIS, 100; abrupte pinnatus, 210; accisus, 157; accretus, 452; acerosus, 115; acetabuliformis, 80; aciculatus, 257; aculeatus, 262; acuminatus, 150; acuminose, 151; acutus, 149, 174; adhaerens, 453; adhering, 453; adnatus, 446; adversus, 430; aequalis, 133; aequatus, 259; aequilaterus, 135; aggregatus, 491;

Fig. 32 Shapes of Spores, etc., illustrating some Terms as used in Mycology

1, filiformis; 2, acerosus; 3, cylindricus; 4, oblongus apicibus obtusis (figura superior) et apicibus truncatis (figura inferior); 5, allantoideus, botuliformis; 6, reniformis; 7, falcatus; 8, discoideus vel lenticularis; 9, discoideus et c, lenticularis; 9, fusiformis; 10, 11, ellipticus (ellipoideus); 11, ovalis; 12, ovatus (ovoideus); 13, obovatus (obovoideus); 14, navicularis; 15, obpyriformis; 16, pyriformis; 17, obclavatus; 18, clavatus; 19, lunatus; 20, sphaericus, globosus; 21, subglobosus; 22, napiformis; 23, turbinatus; 24, doliformis; 25, campanulatus; 26, peltatus; 27, spatulatus; 28, ampulliformis; 29, lageniformis (sensu Josserandi); 30, acicularis; 31, subulatus; 32, hamatus, uncinatus; 33, cornuformis; 34, ventricosus; 35, apex mucronatus; 36, apex acutus; 37, crenatus; 38, crenulatus; 39, dentatus; 40, serratus; 41, laciniatus (from G. C. Ainsworth & G. R. Bisby, *Dictionary of the Fungi*, 5th ed.; 1961)

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References relevant to this chapter are given in the General Bibliography (Chapter XXVI).

## CHAPTER XXIII

## Chemical Reactions and Tests

Chemical reactions of lichens, p. 358—Chemical reactions of algae and fungi, p. 359—Chemical names, p. 360—References, p. 362.

## CHEMICAL REACTIONS OF LICHENS

The ancient and widespread use in dyeing of different species of lichens to produce different colours indicates an awareness of easily detected correlated morphological and chemical characters among these plants which was empirically recognized in the far distant past but which the Scandinavian lichenologist William Nylander (1822–99) was the first to employ scientifically as an aid to their identification. In a paper of 1866 on chemical criteria for the study of lichens, Nylander pointed out that certain species of *Parmelia*, for example, turned red when treated with a solution of bleaching powder (*solutio hypochloritis calcici*,  $\text{CaCl}_2\text{O}$ ) while others showed no reaction, and that caustic potash (*kali causticum*, KOH) turned some species red, others yellow. He noted such reactions in his subsequent descriptions, and the recording of these is now standard procedure in lichenology, even though their taxonomic value has been very diversely assessed (cf. Almborn, 1952; Hale, 1961). Further investigations, notably by Asahini (1954; cf. also Hale, 1961), have revealed an extraordinary variety of organic compounds in lichens, among the most widespread of these being usneic acid (*acidum usneicum*,  $\text{C}_{18}\text{H}_{16}\text{O}_7$ ), lecanoric acid (*acidum lecanoricum*,  $\text{C}_{18}\text{H}_{14}\text{O}_7$ ), gyrophoric acid (*acidum gyrophoricum*,  $\text{C}_{24}\text{H}_{20}\text{O}_{10}$ ) and atranorine (*atranorinum*,  $\text{C}_{19}\text{H}_{18}\text{O}_8$ ).

The presence of such substances is easily recorded in Latin descriptions, e.g. *podetia acidum fumarprotocetraricum et atranorinum continentia* (podetia containing fumarprotocetraric acid and atranorine). When stating the results of colour tests, lichenologists use the abbreviation C or Cl for a saturated aqueous solution of calcium hypochlorite ( $\text{CaCl}_2\text{O}$ ), J or I for iodine solution (I), K or KOH or KHO for an aqueous solution of potassium hydroxide (KOH), P or PD for *p*-phenylenediamine ( $\text{C}_6\text{H}_4(\text{NH}_2)_2$ ). When two reagents are applied one after

the other, the appropriate abbreviations follow the same order, e.g. KC, i.e. K then C. The minus sign (–) or a phrase, e.g. *non reagens* (not reacting), *non tinctus* (not coloured), *immutatus* or *non mutatus* (not changed), indicates no colour reaction. The plus sign (+) indicates a positive colour reaction. These signs may be placed one above the other to indicate different reactions in the upper cortex and the medulla; thus  $\text{K}\pm$  indicates a positive reaction to K by the upper cortex, a negative reaction by the medulla. With a positive reaction, the colour is then stated. Thus with K+ the lichen studied may become yellowish (*flavescens*, *sublutescens*, *lutescens*, *subluteus*) or yellow (*flavus*, *luteus*), tawny (*fulvescens*, *fulvus*), rust-coloured (*ferrugineus*), orange-tawny (*aurantiaco-fulvus*), rose-tinged (*roseo-tinctus*) or blood-red (*sanguineo-rubens*, *kermesinus*). With J+ it may become yellowish (*flavescens*, etc.) or bluish (*coerulescens*), blue (*coeruleus*) or violet-blue (*violaceo-coeruleus*). In Latin descriptions these descriptive adjectives agree grammatically with the name of the organ qualified, e.g. *thallus K luteus* (thallus turned yellow by K), *thecium J violaceo-coeruleum*, *K non reagens* (thecium turned violet-blue by J, not reacting to K), *hyphae J non reagentes* (hyphae not reacting to J), *hymenio J non tincto*, *sporis J lutescentibus* (with the hymenium not coloured by J, the spores turned yellowish by J). For further words relating to colours, see Chapter XVIII.

## CHEMICAL REACTIONS OF ALGAE AND FUNGI

Chemical tests have also proved helpful in identifying other groups of cryptogams. Thus the phrase *chlorozincico iodurato* is used in descriptions of Algae to state their reaction to Schulze's solution (chlor-zinc-iodine). In the fungus genus *Russula*, for example, *R. xerampelina* turns green (*viridescens*) when treated with iron sulphate (*ferri sulphas*) whereas most species turn pink (*roseus*). Yeasts (cf. Frederiksen, 1956; Pedersen, 1958) are necessarily distinguished by their growth (*crescentia*) on culture media (*substrata nutricia*), e.g. malt extract (*extractum mali*) or malt agar (*agar maltatus*), their assimilation (*assimilatio*) of sugars, e.g. glucose (*glucosum*), galactose (*galactosum*), lactose (*lactosum*), maltose (*maltosum*) or saccharose (*saccharosum*), and of potassium nitrate (*kalii nitras*), and other reactions. Frederiksen (1956) provides a good example of a description (see p. 174) in modern Latin simply and ingeniously overcoming the difficulty of dealing with matters so remote from the themes of classical Latin literature. Behaviour on different culture media also needs study, for example, in *Aspergillus* and *Penicillium*.

## CHEMICAL NAMES

In introducing chemical data into Latin descriptions, chemical formulae should be given whenever possible and the Latin names of substances should be those traditionally used in pharmaceutical Latin (cf. Cooper & McLaren, 1950) or constructed in the same manner. Thus an 'acid' is *acidum* (n.), 'acetic acid' *acidum aceticum*, hence 'usneic acid' is *acidum usneicum*. The names of acid radicles ending in English as '-ate' end in pharmaceutical Latin in -*as* (m.), e.g. *chloras* (chlorate), *nitras* (nitrate), *sulphas* (sulphate); those in '-ite' end in -*is*, e.g. *nitris* (nitrite), *sulphis* (sulphite). Salts ending in English as '-ide' end in Latin as -*idum*, e.g. *chloridum* (chloride). The name of the element is given in the genitive, e.g. *zinci chloridum* (chloride of zinc). Names of oxides end in *oxidum* (n.), e.g. *dioxidum* (dioxide), *hydroxidum* (hydroxide), *peroxidum* (peroxide). Those of sugars end in -*osum*, e.g. *glucosum* (glucose). Since the Latin names of most of the chemical elements (cf. Flood, 1963) end in -*um*, as also those of many compounds, it is simplest when in doubt to form other names by analogy with these and treat them as neuter.

The following is a list of the more important words relating to chemical matters which can be used in Latin descriptions: s. = noun; m. = masculine; f. = feminine; n. = neuter; adj. = adjective; part = participle; gen. sing. = genitive singular; the numerals I, II, III, IV and the letters A, B, indicate declensions (see pp. 63, 68, 92, 93).

**Acetate**: acetas (s.m. III), gen. sing. acetatis.

**acetic**: aceticus (adj. A).

**Acid**: acidum (s.n. II), gen. sing. acidi.

**acidic**: acidus (adj. A).

**aethylicus**: see ethyl.

**Agar**: agar (s.m. II), gen. sing. agari; *agar Czapekii*, Czapek's solution agar (cf. Thom & Raper, *Man. Aspergilli* 32; 1945); *agar ex infusione foeni*, hay infusion agar (cf. Thom & Raper, l.c. 35); *malto-agar*, *agar maltatus*, malt agar. *See Must*.

**Alcohol**: alcohol (s.n. III), gen. sing. alcoholis; *ethanoleum*, *alcohol ethylicum*, ethyl alcohol; *alcohol methylicum*, methyl alcohol.

**Aluminium** (Al): aluminium (s.n. II), gen. sing. aluminii.

**Ammonia**: ammonia (s.f. I), gen. sing. ammoniae.

**Amylum**: see Starch.

**Arbutin**: arbutinum (s.n. II), gen. sing. arbutini.

**Arsenic** (As): arsenicum (s.n. II), gen. sing. arsenici.

**arsenical**: arsenicalis (adj. B).

**Atranorine**: atranorinum (s.n. II), gen. sing. atranorini.

**Aurum**: see Gold.

**Butter**: butyrum (s.n. II), gen. sing. butyri.

**Calcium** (Ca): calcium (s.n. II), gen. sing. calcii.

**Carbon** (C): carbo (s.m. III), gen. sing. carbonis.

**Carbonate**: carbonas (s.m. III), gen. sing. carbonatis.

**caustic**: causticus (adj. A).

**Chlorate**: chloras (s.m. III), gen. sing. chloratis.

**Chloride**: chloridum (s.n. II), gen. sing. chloridi.

**Chlorine**: chlorinum (s.n. II), gen. sing. chlorini.

**Copper** (Cu): cuprum (s.n. II), gen. sing. cupri.

**Dextrose**: see Glucose.

**distilled**: destillatus (part A); *aqua destillata*, distilled water.

**Ethanol**: ethanoleum (s.n. II), gen. sing. ethanolei; see Alcohol.

**ethyl**: ethylicus (adj. A), aethylicus (adj. A).

**Extract**: extractum (s.n. II), gen. sing. extracti; *cultura in extracto mali*, culture on malt extract.

**Ferrum**: see Iron.

**Fructose**: fructosum (s.n. II), gen. sing. fructosi.

**fumarprotocetraric**: fumarprotocetraricus (adj. A).

**Gelatin**: gelatinum (s.n. II), gen. sing. gelatini.

**Gelatina**: see Jelly.

**Glucose**: glucosum (s.n. II), gen. sing. glucosi.

**Gold** (Au): aurum (s.n. II), gen. sing. auri.

**gyrophoric**: gyrophoricus (adj. A).

**Hydrargyrum**: see Mercury.

**hydrochloric**: hydrochloricus (adj. A), muriaticus (adj. A).

**Hydroxide**: hydroxidum (s.n. II), gen. sing. hydroxidi.

**Hypochlorite**: hypochloris (s.m. III), gen. sing. hypochloritis.

**Infusion**: infusum (s.n. II), gen. sing. infusi.

**Iodine** (I): iodum (s.n. II), gen. sing. iodi; jodium (s.n. II), gen. sing. jodi.

**Iron** (Fe): ferrum (s.n. II), gen. sing. ferri.

**Jelly**: gelatina (s.f. I), gen. sing. gelatinae.

**Jodium**: see Iodine.

**Kalium**: see Potassium.

**Lactose**: lactosum (s.n. II), gen. sing. lactosi.

**Laevulose**: see Fructose.

**Lead** (Pb): plumbum (s.n. II), gen. sing. plumbi.

**lecanoric**: lecanoricus (adj. A).

**Malt**: maltum (s.n. II), gen. sing. malti.

**Malt-agar**: malto-agar (s.m. II), gen. sing. malto-agari; agar (s.m. II) maltatus (adj. A).

**malted**: maltatus (adj. A).

**Maltose**: maltosum (s.n. II), gen. sing. maltosi.

**Mercury** (Hg): hydrargyrum (s.n. II), gen. sing. hydrargyri.

**methyl**: methylicus (adj. A).

**Mixture**: mistura (s.f. I), gen. sing. misturae.

**moistened**: madefactus (part. A).

**muriaticus**: see hydrochloricus.

**Must**: mustum (s.n. II), gen. sing. musti; *in musto ex hordeo cum agarō*, on wort agar.

Nitrate: nitras (s.m. III), *gen. sing.* nitratis.

nitric: nitricus (adj. A).

Nitrite: nitris (s.m. III), *gen. sing.* nitritis.

Oil: oleum (s.n. II), *gen. sing.* olei; *guttula oleosa*, oil droplet.

oily: oleosus (adj. A).

oxalic: oxalicus (adj. A).

Oxide: oxidum (s.n. II), *gen. sing.* oxidi.

Pectin: pectinum (s.n. II), *gen. sing.* pectini.

Peroxide: peroxidum (s.n. II), *gen. sing.* peroxidi.

Phosphate: phosphas (s.m. III), *gen. sing.* phosphatis.

Plumbum: *see* Lead.

Potassium (K): kalium (s.n. II), *gen. sing.* kalii; potassium (s.n. II), *gen. sing.* potassii.

Propionate: propionas (s.m. III), *gen. sing.* propionatis.

protocetraric: protocetraricus (adj. A).

Saccharose: saccharosum (s.n. III), *gen. sing.* saccharosi.

Salt: sal (s.m. and n. III), *gen. sing.* salis.

Silver (Ag): argentum (s.n. II), *gen. sing.* argenti.

Sodium (Na): natrium (s.n. II), *gen. sing.* natrii; sodium (s.n. II), *gen. sing.* sodii.

Solution: solutio (s.f. III), *gen. sing.* solutionis.

Stannum: *see* Tin.

Starch: amyrum (s.n. II), *gen. sing.* amyli.

starchy: amylaceus (adj. A).

sterilized: sterilisatus (adj. A), sterilifactus (adj. A).

Sucrose: sucrosum (s.n. II), *gen. sing.* sucrosi.

Sugar (in general): saccharum (s.m. II), *gen. sing.* sacchari.

Sulphate: sulphas (s.m. III), *gen. sing.* sulphatis.

Sulphide: sulphidum (s.n. II), *gen. sing.* sulphidi.

Sulphite: sulphis (s.n. III), *gen. sing.* sulphitis.

Sulphur (S): sulphur (s.n. III), *gen. sing.* sulphuris; sulfur (s.n. III), *gen. sing.* sulfuris.

sulphuric: sulphuricus (adj. A).

sulphurous: sulphurosus (adj. A).

Temperature: temperatura (s.f. I), *gen. sing.* temperaturae.

Tin (Sn): stannum (s.n. II), *gen. sing.* stanni.

usneic: usneicus (adj. A).

Zinc (Zn): zincum (s.n. II), *gen. sing.* zinci.

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## CHAPTER XXIV

## Symbols and Abbreviations

Linnaean signs, p. 364—Other signs, p. 366—Standard abbreviations, p. 367  
—References, p. 372.

To save both space and time, botanical Latin employs a number of symbols and abbreviations which by frequent and consistent association with certain meanings have become so familiar that they 'avoide the tediouse repetition of these words' (Robert Recorde's justification in 1557 for introducing the = sign for equality; cf. Cajori, 1923; Tanner, 1963); in certain contexts they express facts more simply than would a full verbal explanation. The + (more, plus) and - (less, minus) signs came into commercial use at the end of the fifteenth century and were given mathematical application by Recorde in 1540. Thomas Harriot posthumously introduced the > (greater than) and < (less than) signs in 1631 (cf. Tanner, 1963). Much earlier the medieval alchemists had used the planetary symbols to signify metals, e.g. ♂ (Saturn) for lead, ♀ (Jupiter) for tin, ♂ (Mars) for iron, ♀ (Venus) for copper (cf. Partington, 1937). The first use of symbols in biology dates from the mid-eighteenth century and stands to the credit of Linnaeus. Mathematics and chemistry gave him good precedent for the introduction of symbols into botanical Latin. In 1751 in the dissertation *Plantae hybridae* he used the sign ♀ for female and the sign ♂ for male (cf. Stearn, 1962). In 1753 in the *Species Plantarum* he added yet others (cf. Stearn, 1957); see below. The great convenience of these symbols led later authors, notably Willdenow, A. P. de Candolle, Trattinick, Loudon and Kuntze, to introduce many others, of which only a few were sufficiently needed as 'stand-in for words' to pass into general use; Kuntze (1893) and Renkema (1942) have dealt with their history.

## LINNAEAN SIGNS

The following is Linnaeus's usage in the *Species Plantarum* (1753), prior astrological and alchemical usage and his usage in the *Genera Plantarum* (1737 et seq.) being given between square brackets.

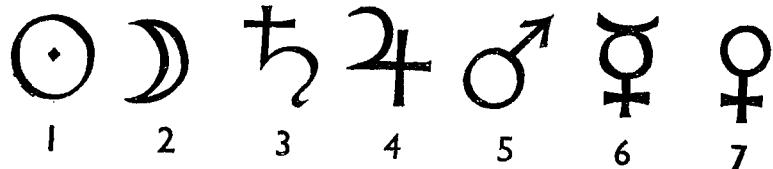


Fig. 33 Medieval planetary Symbols used in Alchemy and Botany  
1, the Sun (gold; annual); 2, the Moon (silver); 3, Saturn (lead; woody); 4, Jupiter (tin; perennial); 5, Mars (iron; male); 6, Mercury (mercury; hermaphrodite); 7, Venus (copper; female) (woodcuts by Fritz Kredel, from R. Koch, *Das Zeichenbuch*, 3rd ed.; 1940)

## In citations of literature

\* indicates a good description to be found at the place cited, e.g. *Hort. cliff.* 13 \* (cf. Sprague & Exell, 1937; Svenson, 1939) [in the *Genera Plantarum*, however, \* indicates a genus of which Linnaeus had studied living material].

† indicates an imperfectly known species or some doubt or obscurity [in the *Genera Plantarum* † indicates that Linnaeus knew the genus only from herbarium material; absence of \* and † indicates here that he knew it only from the literature].

♂ [Mars; iron] male  
♀ [Venus; copper] female  
☿ [Mercury; mercury] hermaphrodite

Used under *Arctopus*, *Cannabis*, *Carica*, *Clutia*, *Ficus*, *Humulus*, *Hydrocharis*, *Mercurialis*, *Nyssa* and *Spinacia*.

## In statements of life-span and habit (after 'Habitat')

♃ [Saturn; lead] woody, i.e. tree or shrub.

♄ [Jupiter; tin] perennial.

♂ [Mars; iron] biennial.

○ [Sun; gold] annual.

## In the margin and annotations

α (alpha), β (beta), γ (gamma), δ (delta), ε (epsilon) and other Greek letters indicate varieties; cf. Chapters X, XVII of Stearn, 1957.

## In the margin as part of an epithet (nomen triviale)

▽ [water] aquaticus -a -um, e.g. *Plantago* ▽ = *Plantago-aquatica*, *Anagall.* ▽ = *Anagallis-aquatica*, *Nasturtium* ▽ : m = *Nasturtium-aquaticum*.

♀ [Venus; copper] *Veneris*, e.g. *umbilicus* ♀ = *umbilicus-veneris*, *Pecten* ♀ = *pecten-veneris*, *speculum* ♀ = *speculum-veneris*.

'Symbols forming part of a specific epithet proposed by Linnaeus must be transcribed' (*Int. Code bot. Nom.* 1961, Art. 23). He used them under *Alisma*, *Campanula*, *Cotyledon*, *Scandix*, *Sisymbrium* and *Veronica*.

#### OTHER SIGNS

In 1839 Lindley gave an extensive survey of signs proposed up to then, most of which never gained currency. Survivors are given below. It should be noted that certain books have their own special signs and abbreviations; the preface or introduction may provide explanations. Thus in Swartz's *Nova Genera et Species Plantarum seu Prodromus* (1788) an asterisk (\*) at the end of a diagnosis indicates that this is based not on a specimen collected by Swartz but on material from other collectors sent to Sir Joseph Banks from the West Indies and hence now in the British Museum (Natural History), London. In Stapf's *Index Londinensis* (1929-31) and its *Supplement* (1941), and also in Stearn's monograph of *Epimedium* and *Vancouveria* (*J. Linnean Soc. London, Bot.*, 51: 409-535; 1938), an asterisk against a citation denotes a coloured illustration; in supplements to the *Index Kewensis* from no. 10 (1947) onwards it simply denotes an illustration. In Kunth's *Nova Genera et Species Plantarum* (1816-25) the names of species and genera new to science collected by Humboldt and Bonpland are marked with †. In his *Prodromus Florae Novae Hollandiae* (1810), however, Robert Brown used the sign † to indicate species known to him only from the account in Labillardière's *Novae Hollandiae Plantarum Specimen* (1804-07). In Acharius, *Lichenographiae Suecicae Prodromus* (1798), the Swedish species are numbered, non-Swedish species unnumbered but marked with an asterisk denoting that Acharius had carefully studied material or the sign † denoting otherwise, i.e. that he knew the species only from literature.

The following have been extensively used:

- ! seen by the Author. After a citation of a specimen it means that this has been examined by the author citing it; after a citation of literature, notably by de Candolle, it means that he has examined an authentic specimen from the author whose work is cited.
- § section or other divisions of a genus.
- \* in Nyman's *Conspectus Florae Europaeae* (1878-82) before a binomial indicates the rank of subspecies; in other works \* between a specific name and an added epithet or name indicates the rank of subspecies.
- ° degree of longitude, latitude or temperature.
- ' foot, e.g. 2' = 2 feet (61 cm.); minute of longitude or latitude.
- " inch, e.g. 3" = 3 inches (7.5 cm.); second of longitude or latitude.
- ''' line, e.g. 4''' = 4 lines ( $\frac{4}{16}$  inch = 0.8 cm.).

oc	very numerous; a large indefinite number.
+	in Nyman's <i>Conspectus</i> indicates a doubtful plant; before or in a name indicates a graft hybrid, e.g. + <i>Laburnocytisus</i> .
+	more, present.
○	lacking, absent.
○	monocarpic ( <i>hapaxanthus, monocarpicus</i> ).
○ or ①	annual ( <i>annuus</i> ).
○ or ②	biennial ( <i>biennis</i> ).
γ	perennial ( <i>perennis</i> ).
h	shrub or woody plant ( <i>frutex vel suffrutex</i> ).
h	tree ( <i>arbor</i> ).
×	hybrid ( <i>hybrida</i> ).
× or ×	degree of magnification, e.g. × 10 = enlarged by 10 times; by, e.g. 20 × 10 cm. = measuring 20 cm. in one direction by 10 cm. in another.
≡	identical; based on the same type; nomenclatural synonym.
±	plus minusve, more or less.
†	before a personal name indicates deceased; referring to a specimen indicates destroyed.
‡	poisonous.
‡	very poisonous.
⊕	actinomorphic, regular.
⊣	zygomorphic, irregular.
μ, μm	micron, one thousandth of a millimetre, 0.0001 cm., approx. $\frac{1}{25,000}$ inch; symbol introduced by W. F. R. Suringar in 1857 ( <i>Diss. Obs. Phyc.</i> , xiii) and 1870 ( <i>Algae Jap.</i> , 3).
>	greater than.
<	smaller than.

#### STANDARD ABBREVIATIONS

a.	anno: in the year.
ad int.	<i>ad interim</i> : for the present, meanwhile, provisionally.
adv.	<i>advena</i> : alien, hence introduced from another country.
aet.	<i>aetatis</i> : of his age; <i>aet. 60</i> , aged 60 years.
aff.	<i>affinis</i> : akin to, bordering.
al.	<i>alii</i> : others; <i>aliorum</i> , of others.
alt.	<i>alter</i> : second of two; <i>ed. alt.</i> , <i>editio altera</i> , second edition.
alt. s.m.	<i>altus</i> : high or deep.
ampl.	<i>altitudine supra mare</i> : at a height above sea-level.
ap.	<i>ampliatus, amplificatus</i> : enlarged, extended.
auct.	<i>apud</i> : with, at the house of, hence in the publication of.
	<i>auctorum</i> : of authors; <i>auct. div.</i> , <i>auctorum diversorum</i> , of various authors; <i>auct. mult.</i> , <i>auctorum multorum</i> , of many authors; <i>auct. nonn.</i> , <i>auctorum nonnullorum</i> , of some authors; <i>auct. omn.</i> , <i>auctorum omnium</i> , of all

austr.	<i>australis</i> : southern.
b.	<i>beatus</i> : blessed, deceased.
bor.	<i>borealis</i> : northern.
c., ca.	<i>circa</i> , <i>circiter</i> : about.
c. descr.	<i>cum descriptione</i> : with description.
c. fr.	<i>cum fructibus</i> : with fruits.
c. ic.	<i>cum ictone</i> : with illustration.
c. s.	<i>cum suis</i> : with collaborators.
cap.	<i>caput</i> : chapter.
cel.	<i>celeberrimus</i> : most celebrated.
centr.	<i>centralis</i> : central.
cet.	<i>cetera</i> : the rest, the remainder.
cf., cfr.	<i>confer</i> : compare.
char.	<i>character</i> : character, characteristics.
cit.	<i>citatus</i> : cited.
cl.	<i>clarissimus</i> : most renowned, celebrated.
cm.	<i>centimetrum</i> : centimetre.
coll.	<i>collegit</i> : he gathered.
comb.	<i>combinatio</i> : combination; <i>comb. nov.</i> , <i>combinatio nova</i> , new combination of name and epithet.
comm.	<i>communicavit</i> : he communicated.
cons.	<i>conservandus</i> : to be kept; <i>nom. cons.</i> , <i>nomen conservandum</i> , conserved name.
corr.	<i>correxit</i> : he corrected.
cult.	<i>cultus</i> : cultivated.
cv.	<i>cultivar</i> .
d.d.d.	<i>dono dedit dedicavit</i> : as a gift he gave and dedicated; <i>dat donat dedicat</i> : he gives, presents and dedicates.
dat.	<i>datus</i> : given.
ded.	<i>dedit</i> : he gave.
del.	<i>delineavit</i> : he drew, he portrayed.
descr.	<i>descriptio</i> : description.
det.	<i>determinavit</i> : he determined, he identified.
diam.	<i>diametro</i> : in diameter.
distr.	<i>districtus</i> : district.
distrib.	<i>distributio</i> : distribution, range.
div.	<i>diversus</i> : various.
dom.	<i>dominus</i> : master (Mr., Herr, Monsieur, etc.).
don.	<i>domina</i> : mistress (Mrs., Frau, Madame, etc.).
e descr.	<i>donavit</i> : he gave.
e num.	<i>e (or ex) descriptio</i> : from the description, according to the description.
e.g.	<i>e numero</i> : from the number.
	<i>exempli gratia</i> : by way of example, for example.

<i>ex parte</i> : in part, partly; <i>e.p.</i> , <i>quoad spec. Jamaic. cit.</i> , in part, as to Jamaican specimen (species) cited.
<i>ejus</i> : of it.
<i>ejusdem</i> : of the same author.
<i>elaboravit</i> : he revised.
<i>emendatus</i> : emended.
<i>emendavit</i> : he emended.
<i>errore typographic</i> : by a printing mistake.
<i>exceptus</i> : excepted.
<i>exclusus</i> : excluded; <i>typo excluso</i> , with the type excluded.
<i>exsiccatus</i> : dried.
<i>figura</i> : Figure, illustration: <i>i. 6 f. 2</i> , Plate 6, Figure 2. (before a personal noun) <i>fide</i> : according to.
(after a personal noun) <i>filius</i> : son; <i>Hook. f.</i> , Hooker filius, J. D. Hooker, son of W. J. Hooker.
(before an epithet) <i>forma</i> : form; <i>f. sp.</i> , <i>forma specialis</i> , special form.
<i>femeinus</i> : female.
<i>filius</i> : son.
<i>floret</i> : it flowers; <i>fl. aest.</i> , <i>floret aestate</i> , it flowers in summer.
<i>floruit</i> : (of a person) he flourished, he lived at this period.
<i>flore</i> : with flower, in flower.
<i>flore pleno</i> : with a double flower.
<i>folio, foliis</i> : with leaf, in leaf, with leaves; <i>fol. var.</i> , <i>foliis variegatis</i> , with variegated leaves.
<i>fructus</i> : fruit, in fruit.
<i>genus</i> : genus.
<i>pro gradu doctoris medici</i> : for the degree of doctor of medicine, used of certain Linnaean dissertations.
<i>hortus</i> : garden.
<i>habitat</i> : it inhabits, hence place of growth; <i>hab. c.b.s.</i> , <i>habitat ad Caput bonae spei</i> , it grows at the Cape of Good Hope.
<i>herbarium</i> : herbarium.
<i>hexapodium</i> : fathom, 6 feet (1.8 m.).
<i>hortorum</i> : of gardens; <i>hortulanorum</i> : of gardeners.
<i>id est</i> : that is.
<i>ibidem</i> : the same, in the same place.
<i>icon</i> : illustration.
<i>idem</i> : the same.
<i>ignotus</i> : unknown.
<i>illustri</i> : celebrated.
<i>in adnotacione</i> : in annotation, in a note.
<i>in litteris</i> : in correspondence.
<i>in loco citato</i> : in the place cited.
<i>in observatione</i> : in observation.

in sched.  
in syn.  
inc. sed.  
incl.  
ined.  
infl.  
inq., inquil.  
ins.  
i.q.  
l.

l.c., loc. cit.

lat.  
leg.  
lg.  
lin.  
lith.  
m.

m., mt.

m.s.m.  
magn.

masc.

mer.  
mm.  
MS., MSS.  
min. parte  
mult.

mus.

mut. char.  
n.

n.v.

nm.  
no.  
nom.

### SYMBOLS AND ABBREVIATIONS

[CH. XXIV]

*in schedula*: on a herbarium sheet or label.  
*in synonymia, in synonymis*: in synonymy.  
*incertae sedis*: of uncertain position.  
*inclusus*: included; *typo incl.*, *typo inclusio*, with the type included.  
*ineditus*: unpublished.  
*inflorescentia*: inflorescence.  
*inquilinus*: naturalized.  
*insula*: island, isle.  
*idem quod*: the same as.  
*vel*; or (*l* for *vel*, like *h* for *nihil*, derives from the procedure of medieval scribes who did not necessarily use an initial letter when abbreviating).  
*loco citato*: at the place cited.  
*latus*: broad, wide.  
*legit*: he gathered.  
*longus*: long.  
*linea*: linea (c. 2 mm.); cf. p. 113.  
*lithographit*: he lithographed.  
*mihi*: to me, of me (dative of possession).  
*metrum, meter*: metre.  
*manu*: by the hand; *m.L.f., manu Linnaei filii*, in the handwriting of the younger Linnaeus.  
*mons, montes*: mountain, mountains.  
*metra supra mare*: metres above sea-level.  
*magnitudo*: size; *magn. nat.*, *magnitudine naturali*, at natural size.  
*masculus*: male.  
*meridionalis*: southern.  
*millimetrum*: millimetre.  
*manuscriptum, manuscripta*: manuscript, manuscripts.  
*pro minore parte*, for the smaller part.  
*multa, multis*: many.  
*museum*: museum; *Herb. Mus. Brit., Herbarium Musei Britannici*, Herbarium of the British Museum.  
*mutatis characteribus*: with the characters changed.  
*nobis*: to us, of us (dative of possession).  
*nomen*: name.  
*novus*: new.  
*non visus*: not seen.  
*non vidi*: I have not seen.  
*nothomorpha*: nothomorph.  
*numero*: number.  
*nomen*: name; *nom. alt.*, *nomen alternativum*, alternative name; *nom. ambig.*, *nomen ambiguum*, ambiguous name; *nom. confus.*, *nomen confusum*, confused name; *nom. cons.*, *nomen conservandum*, name conserved in

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### STANDARD ABBREVIATIONS

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*International Code of botanical Nomenclature*; *nom.*, *illeg.*, *nomen illegitimum*, illegitimate name, *nom. legit.*, *nomen legitimum*, legitimate name; *nom. nud.*, *nomen nudum*, *nomen sol.*, *nomen solum*, name unaccompanied by a description or reference to a published description; *nom. obsc.*, *nomen obscurum*, obscure name; *nom. tant.*, *nomen tantum*, name only; *nom. superfl.*, *nomen superfluum*, name superfluous when published.  
*non aliorum*: not of other authors.  
*novus*: new.  
*observatio*: observation.  
*occidentalis*: western.  
*omnis*: all.  
*opere citato*: in the work cited.  
*orbis*: the world; *orb. nov.*, *orbis novus*, the New World; *orb. vet.*, *orbis vetus*, the Old World.  
*orientalis*: eastern.  
*pagina*: page.  
*proprie dicta*: properly speaking.  
*plus minusve*: more or less.  
*pro parte*: partly, in part; *p.mag.p.*, *pro magna parte*, *p.p.maj.*, *pro parte majore*, for the greater part; *p.p.max.*, *pro parte maxima*, for the greatest part, almost entirely; *p.p.min.*, *pro parte minore*, for a small part.  
*pedalis*: a foot (30 cm.) long; cf. p. 113.  
*pinxit*: he painted.  
*planta*: plant; *p.p. quoad pl. brit.*, *pro parte quoad plantam britannicam*, in part as regards the British plant.  
*plurimus*, most.  
*pollicaris*: an inch (2.5 cm.) long; cf. p. 113.  
*praecipue*: especially.  
*praecedens*: preceding.  
*propositus*: proposed.  
*provincia*: province.  
*provisorius*: provisional.  
*quod est*: which is.  
*quod vide*: which see.  
*quorumdam*: of some authors.  
*rarus, rarissimus*: rare, very rare.  
*recentiorum*: of recent authors.  
*regio*: district, region, territory.  
*seu, sive*; or.  
*sensu amplificato*: in an enlarged sense.  
*sensu lato*: in a broad sense.  
*sine numero*: without a number, unnumbered.  
*sensu stricto*: in a narrow sense.  
*scheda*: label; *in sched.*, on a herbarium label.

## SYMBOLS AND ABBREVIATIONS

[CH. XXIV]

scrips. *scripsit*: he has written.  
 sec. *secus, secundum*: following, according to.  
 sect. *sectio*: section.  
 sens. *sensu*: in the sense of.  
 sept. *septentrionalis*: northern.  
 seq. *sequens*: following; *et seqq., et sequentes*, and the following.  
 ser. *sequitur*: it follows.  
 sp. *series*: series.  
 species: species; *pro sp., pro specie*, as a species.  
 specificus: specific.  
 specimen: specimen.  
 sphalm. *sphalmate*: by mistake, mistakenly.  
 ssp. *subspecies*: subspecies.  
 st., stat. *status*: rank; *stat. nov., status novus*, new rank.  
 syn. *synonymon, synonymia*: synonym, synonymy.  
 t., tab. *tabula*: Plate.  
 t. *teste*: on the evidence of.  
 tomus: volume; *t.c., tomus citatus*, volume cited.  
 translatio nova: new transfer; used of epithets transferred without change of rank of the taxon; *cf. comb. nov., st. nov. above*.  
 typ. *typus*: type.  
 u.s. *ut supra*: as above.  
 v., var. *varietas*: variety; *pro var., pro varietate*, as a variety.  
 v. *vel*: or.  
 vide: see.  
 visum: seen.  
*vidi*: I have seen; *v.c., vidi cultam*, I have seen it cultivated; *v. in hb., vidi in herbario*, I have seen it in the herbarium; *v.s., vidi siccum*, I have it in a dried state; *v. spont., vidi spontaneum*, I have seen native or wild material; *v.v., vidi vivum*, I have seen it in a living state.<sup>1</sup>  
 v., vol. *volumen*: volume.  
 verisim. *verisimiliter*: probably.  
 vet. *veteres*: the ancients.  
 viz. *videlicet*: namely.

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<sup>1</sup> *plantam*, plant, is here understood.

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PART FOUR  
**VOCABULARY AND BIBLIOGRAPHY**

## CHAPTER XXV

# Vocabulary

This vocabulary attempts to provide Latin-English and English-Latin equivalents for most of the terms and expressions used in describing plants, together with a number of Latin and Greek word elements often used in forming their names. It does not claim to list every word which has ever been used in descriptive botany, or to provide meanings and explanations as distinct from equivalents for more than a limited number: for those not included the meaning should either be evident from that of a related word or, if not, should be found in a dictionary of classical Latin, if of a general nature, or in a glossary of technical terms relating to a particular field, when of more restricted use. Attention is directed to the lists of names and terms in

- Chapter XVI. Habitats (pp. 202-205)
- Chapter XVII. Geographical Names (pp. 206-235)
- Chapter XVIII. Colour Terms (pp. 236-259)
- Chapter XIX. Greek Words (pp. 260-281)
- Chapter XXI. Prefixes and Suffixes (pp. 301-310)
- Chapter XXII. Descriptive Terminology (pp. 311-357)

Not all of these are included below.

A. P. de Candolle included Latin and French terms in one alphabetical sequence, treating as one entry those which differed only in termination and were evidently the same, e.g. *androgynus* and *androgyne*. In like manner English and Latin terms are here listed together, without cross-references when they would come more or less side by side, e.g. *ovate* and *ovatus*. Sometimes the Latin form has been used for the heading of the entry, sometimes the English. Latin words are followed by an indication of their grammatical nature, e.g. *ad* (prep. with acc.), *Annus* (s.m. II), *annuus* (adj. A), *asymmetrice* (adv.), *at* (conj.), *attingens* (part. B). Nouns are listed in the entry headings with capital letters, other parts of speech with lower-case letters. Since Latin and English words may be only partly equivalent in their range of meaning, the user of this vocabulary, as indeed of any bilingual vocabulary, is recommended to refer backwards and forwards from one language to the other, particularly as owing to the unfortunately but unavoidably desultory method of compilation (see Preface) of this vocabulary the

information needed may be given under either. If, alas, it occurs under neither, study of analogous words may yield it. Scattered through the vocabulary are many examples taken from a wide range of botanical literature. Some of these with but slight modification can be transferred ready-made into descriptions of new taxa; others may be useful as models. Hence the English versions follow the Latin more or less literally. Thus the literal English version of *caules plures sinistrorum volubiles glabri aculeis armati virides vel rubri* as given here is 'stems several to the left twining slender glabrous with prickles armed green or red' but a translation would read 'stems several, twining to the left, glabrous, armed with prickles, green or red'.

Some important or frequently used or anomalous terms have been declined in full. For many others only the cases most used in botanical Latin, e.g. the ablative, have been given. For yet others it has seemed adequate to mention simply their grammatical classification in brackets following the word, e.g. the entry *Hibernaculum* (s.n. II) indicates that this is a noun (s.) of neuter gender (n.) belonging to the Second Declension (II), and hence will be declined like other neuter Second Declension nouns in accordance with the model on p. 73.

The numbers at the end of paragraphs, e.g. 365, 386, refer to the numbered definitions and figures of Lindley's glossary (Chapter XXII).

**ABBREVIATIONS**—*abl.*: ablative case (see p. 67); *acc.*: accusative case (see p. 64); *adj.*: adjective (for Declension A, see p. 92; for Declension B, see p. 93); *adv.*: adverb (see p. 104); *c.*: common gender; *cf.*: confer, consult; *class.*: classical; *comp.*: compound words; *compar.*: comparative; *conj.*: conjunction (see p. 128); *dat.*: dative case (see p. 66); *dem.*: demonstrative; *e.g.*: for example; *f.*: feminine gender; *fr.*: from; *gen.*: genitive case (see p. 65); *Gk.*: Greek; *H.C.C.*: Horticultural Colour Chart (1938-41); *i.e.*: that is; *L.*: Latin; *lit.*: literally; *m.*: masculine gender; *n.*: neuter gender; *nom.*: nominative case; *opp.*: opposite; *part.*: participle (see p. 91; for Declension A, see p. 92; for Declension B, see p. 95); *pl.*: plural; *prep.*: preposition (see p. 125); *pron.*: pronoun; *q.v.*: which see; *s.*: noun, substantive (see p. 59; for Declension I, see p. 68; II, p. 70; III, p. 74; IV, p. 89; V, p. 90); *sing.*: singular; *usu.*: usually.

## A

*a-* (Gk. prefix): *in Gk. comp.*, without, destitute of, lacking, un-, -less; see *E-*, *EX-*; *achlamydeus*, without perianth, *lit.* 'without a cloak'; *apetalus*, without petals; before a vowel *a-* becomes *an-*.  
*a, ab* (prep. with abl.): away from, out of, from, by, at, in; *a priori differt indumento*, from the first it differs in indumentum; *ab affinibus distincta*, from its relatives distinct; cf. *SEEN*.  
*abaxialis* (adj. B): abaxial, away from the axis or central line, turned towards the base, ventral; cf. *ADAXIALIS*.  
*abbreviatus* (part. A): shortened.

*aberrans* (part. B): aberrant, departing from the usual; cf. *ABNORMAL*, *ANOMALUS*, *ATYPICUS*. 100  
*abeunte* (nom. pl., part. B): see *ABIENS*.  
*abhorrens* (part. B): differing from, not agreeing with.  
*abhymenialis* (adj. B): abhymenial, opposite the hymenium.  
*abiens* (part. B): departing, changing suddenly into (with *in* and *acc.*), passing away, leaving off; cf. *ANGLE*.  
*able*: aptus (part. A).  
*abnormal*: *abnormalis* (adj. B), *abnormis* (adj. B); cf. *ABERRANS*, *ANOMALUS*, *ATYPICUS*.

*abode*: *sedes* (s.f. III), *gen. sing.* *sedis*; *habitatio* (s.f. III), *gen. sing.* *habitationis*.  
*abortion*: *abortio* (s.f. III, vi), *abortus* (s.m. IV): *fructus bilocularis sed saepius ut videtur abortu monospermus*, fruit two-chambered but most often apparently through abortion one-seeded. *abortive*: *abortivus* (adj. A).  
*abounding with*: *scatens* (part. B).  
*about*: *circa* (adv.), *circum* (adv.), *circiter* (adv.), *fere* (adv.), *quasi* (adv.).  
*above*: *super* (prep. with acc., rarely abl.), *supra* (prep. with acc.), *insuper* (prep. with abl., rarely acc.).  
*above all*: *imprimis* (adv.).  
*from above*: *desuper* (adv.), *insuper* (adv.), *superne* (adv.).  
*above-ground*: *suprateraneus* (adj. A).  
*Abridgment*: *breviarium* (s.n. II).  
*abrumens* (part. B): breaking off.  
*abrupt*: *abruptus* (adj. A). *abruptly*: *abrupte* (adv.). *abruptly pinnate*: *pinnatus* (adj. A).  
*abscissus* (part. A): cut off, steep, precipitous.  
*absconditus* (part. A): hidden, concealed.  
*Absence*: *absentia* (s.f. I). *absent*: *absens* (part. B), *carens* (part. B); cf. *LACKING*.  
*absque* (prep. with abl.): without; *absque descriptione*, without a description.  
*abundant*: *abundans* (part. B), *abundus* (adj. A), *largus* (adj. A).  
*abundantly*: *abundanter* (adv.), *copiose* (adv.), *abunde* (adv.).  
*ac* (conj.): and, q.v.  
*acanth-*, *acantho-*: in *Gk. comp.*, spiny, thorny.  
*Acarodomatium*: *acarodomatium* (s.n. II); *acarodomatia nulla*, *acarodomatia nil*; *nervi in axillis acarodomatii dense pilosus instructi*, nerves at the axils with densely pilose acarodomatia furnished.  
*acaulescens* (adj. B), *acaulis* (adj. B): stemless, or apparently so.  
*accedens* (part. B): approaching, coming near to, resembling (with *dat.* or *ad* and *acc.*).  
*accessorius* (adj. A): accessory, additional.  
*accidental*: *fortuitus* (adj. A). *accidentally*: *fortuito* (adv.).  
*acclivis* (adj. B): uphill, sloping upwards; cf. *DECLIVIS*.  
*accompanied*: *concomitatus* (part. A), *comitatus* (part. A); *asci clavatae paraphysis filiformibus fine incrassatis concomitati*, asci club-shaped accompanied by paraphyses thread-like at the end thickened.  
*according to*: *teste*, q.v., *fide*, q.v., *secundum* (prep. with acc.).  
*accordingly*: *ergo* (adv.), *igitur* (conj.), *itaque* (conj.).  
*accrescent*: *accrescens* (part. B), *auctus* (part. A), *increcens* (part. B); *calyx*

into a beak drawn out; *achenia in eodem capitulo heteromorpha*, achenes in the same head of differing shape; *achenia subglobosa vel oblique ovoidea transverse costata pilosa apice rostrata*, achenes subglobose or obliquely ovoid transversely ribbed pilose at the tip beaked; *achenium tenuia longitudinaliter sulcatum*, achene thin longitudinally furrowed; *achenia tenuia longitudinaliter sulcata*, achenes thin longitudinally furrowed. cf. CYPSELA.

**achromaticus** (adj. A), **achromus** (adj. A): colourless. **acicularis** (adj. B): acicular, i.e. narrow, stiff, pointed, like a needle. **aciculatus** (adj. A): marked with very fine irregular streaks. 257

**Acid**: *acidum* (s.n. II); *fructus succos acidis malico, citrico necnon tannico instructi*, fruit juicy, provided with malic, citric and also tannic acid; see Chapter XXIII. **acid**: *acidus* (adj. A); cf. BITTER.

**Acies** (s.f. V): sharp edge, angle; *lamellae acie denticulatae*, gills at the edge denticulate.

**aciformis** (adj. B): needle-like.

**Acorn**: *glands* (s.f. III. ix), *abl. sing. glande, nom. pl. glandes, abl. pl. glandibus*.

**Acorn-cup**: *cupula* (s.f. I), *abl. sing. cupula, nom. pl. cupulae, abl. pl. cupulis; cupula turbinata, basi in stipitem squamosum conicum angustata, squamis laxe adpressis ovatis obtusis velutinis, glande ellipsoidea dimidio exserta*, cup top-shaped, at base narrowed into a stalk scaly conical, with scales loosely appressed ovate blunt velvety, with acorn ellipsoid by half exserted; *cupulae hemisphaericae pubescentes, squamis lanceolatis acutis, glande ovoidea cupulam dimidio superante*, cups hemispherical pubescent, with scales lanceolate acute, with acorn ovoid overtopping the cup by half.

**acranthus** (adj. A): with flowers at apices of shoots. **acrocarpus** (adj. A): with terminal fruit. **acrodromus** (adj. A): acrodromous; see VEINING. **acrogenus** (adj. A): borne at apices. **acropetus**: (adj. A): acropetal; see BASIFUGIENS. **acrosopicus** (adj. A): facing or directed towards the apex.

**Acta** (s.n. II. pl.): record of events, reports, proceedings, transactions; *Acta Anglica*, Philosophical Transactions of the Royal Society of London.

**actino-**: in *Gk. comp.*, rayed, star-like, radiating from a centre. **actinodromus** (adj. A): with veins radiating from a centre.

**actinomorphus** (adj. A): actinomorphic, regular. **active**: *agilis* (adj. B), *mobilis* (adj. B). **actively**: *impigre* (adv.). **aculeatus** (adj. A): prickly, spine-like. **Aculeus** (s.m. II): prickle. 262

**Acumen**: *acumen* (s.n. III. vi), *abl. sing. acumine*.

**acuminatus** (part. A): acuminate, i.e. tapering gradually or abruptly from inwardly curved sides into a narrow point. 150

**acutangularis** (adj. B), **acutangulatus** (adj. A), **acutangulus** (adj. A): sharp-angled. **acutatus** (adj. A): sharpened, making an acute angle. **acut-**: in *L. comp.*, pointed; in *Gk. comp.*, oxy-; *acutiflorus, oxyanthus*, with pointed flowers; *acutifolius, oxyphyllus*, with pointed leaves. **acutiusculus** (adj. A): slightly acute. **acutus** (adj. A): acute, pointed, i.e. narrowed gradually and making an angle of less than 90°. 149, 174

**ad** (prep. with acc.): to, near to, at; *certe ad speciem descriptam pertinet*, certainly to the species described it belongs; *quoad folia ad Lyoniam costatam, quoad fructus ad L. haitiensem accedit*, as to leaves to Lyonia costata, as to fruit to L. haitiensis it comes near; *caules ad nodos radicantes*, stems at the nodes rooting; *folia ad nervos pilosa*, leaves at the nerves pilose; *inflorescentiae ad ramos ramiculos*, inflorescences terminal on branches and branchlets; *tubus a basi ad medium ampliatus, a medio ad apicem contractus*, tube from the base to the middle broadened, from the middle to the tip contracted.

**adaxianus** (adj. A): very hard. **adaxialis** (adj. B): adaxial, i.e. towards the axis or centre, turned towards the apex.

**added**: *adjectus* (part. A).

**ademptus** (part. A): taken away, deprived of. **aden-**: in *Gk. comp.*, gland-; *adenospermus*, with glandular seeds.

**adest**: it is present; cf. ADSUNT, PRESENT.

**adhering**: *adhaerens* (part. B), *haerens* (part. B); *thallus substrato adhaerens*, thallus to the substratum clinging. 453

**adhibitus** (part. A): used, employed, put to use.

**adhue** (adv.): to this place, hitherto, thus far, until now; *alliorum adhuc cognitorum monographia*, of the alliums up to the present known a monograph.

**adjectus** (part. A): added.

**adjoining**: *contiguus* (adj. A), *confinis* (adj. B; usu. followed by dat.).

**adligans** (part. B), **alligans** (part. B): clasping, adhering to; *radices adligantes*, clasping roots.

**admodum** (adv.): fully, wholly, much. **admonens** (part. B): bringing to mind, suggesting; cf. REVOCANS.

**adnascens** (part. B): growing to or upon. **adnatus** (part. A): adnate, attached the whole length or by the whole length or broadly attached. 446

**adnexus** (part. A), **annexus** (part. A): adnexed (used of gills which just reach the stem).

**adpressus** (part. A), **appressus** (part. A): appressed, lying flat against.

**adscendens** (part. A): ascending. 395

**adspersus** (part. A), **aspersus** (part. A): scattered.

**adsumt**: they are present; cf. ADEST, DEEST, DESUNT, PRESENT.

**adulescens** (part. B): not yet mature.

**adult**: *adultus* (part. A), *maturus* (adj. A).

**Adumbratio** (s.f. III): sketch, outline.

**aduncatus** (adj. A), **aduncus** (adj. A): hooked.

**adustus** (part. A): blackened, scorched.

**advanced**: *provectus* (part. A).

**advectus** (part. A): carried, brought; *ex Asia advectus*, introduced from Asia.

**adventitious**: *adventitius* (adj. A); *gemmae adventitiae*, adventitious buds.

**adversum** (adv. with acc., prep.): opposite to, against, before. **adversus** (part. A): turned towards, opposite. 430

**Aecidium**: *aecidium* (s.n. II).

**aeger** (adj. A): diseased, sick.

**aegerrime** (adv.): with very great difficulty. **aegre** (adv.): with difficulty, scarcely; *capsula valvis carnosis aegre dehiscentibus*, capsule with valves fleshy hardly dehiscing.

**aegrotus** (adj. A): diseased, sick; cf. LANGUESCENS, MORBIDUS.

**aemulans** (part. B), **aemulus** (adj. A): rivaling, more or less equaling.

**aeneus** (adj. A): bronze, brazen.

**aequabilis** (adj. B): uniform, consistent.

**aequabiliter** (adv.), **aequaliter** (adv.): evenly.

**aequalis** (adj. B): equal. **aequans** (part. B): equaling. **aeque** (adv.): in like manner, equally, uniformly. **aequicrassus** (adj. A): of even thickness.

**aequidistans** (adj. B): equidistant, the same length apart. **aequilaterus** (adj. A): equal-sided. **aequilongus** (adj. A): of the same length. 133, 135

**aequatorius** (adj. A): equatorial.

**aequatus** (part. A): even, levelled. 259

**aequimagnus** (adj. A): of same size.

**Aerenchyma**: *aerenchyma* (s.n. III).

**aerial**: *aerius* (adj. A).

**aerobic**: *aerobius* (adj. A).

**Aerophore**: *aerophorum* (s.n. II).

**aeruginosus**, **aeruginosus** (adj. A): *verdigris* (H.C.C. 6.55).

**Aes** (s.n. III. iv): copper; see ILLUSTRATION.

**Aestas** (s.f. III. ii): summer; *aestate ineunte*, at beginning of summer; *aestate*, in summer. *aestivalis* (adj. B), *aestivus* (adj. A): pertaining to summer.

**Aestivation**: *aestivatio* (s.f. III. vi), *abl. sing. aestivatione*; *praefloratio* (s.f. III. vi), *abl. sing. praefloratione*. The term *aestivation* for the arrangement of the parts of calyx or corolla in the flower-bud was introduced by Linnaeus in 1762 (cf. VERNATION). It is said to be *open* (*aestivatio aperta*) when the parts do not touch one another, *valvate* (*valvata*, *valvaris*) when the parts touch along their margins without overlapping, *induplicate* (*induplicativa*) when the margins are bent abruptly inwards and their outer faces touch without overlapping, *re-duplicate* (*reduuplicativa*) when the margins are bent abruptly outwards and their inner faces touch without overlapping. When the parts overlap, the aestivation may be simply *imbricate* (*aestivatio imbricata*), the parts overlapping parallelly at the margins; *quincuncialis* (*quincuncialis*; *quincuncialiter imbricata*) when of five parts two have their margins both inside, two with margins both outside, one with one margin inside and the other outside; *cochlear* (*cochlearis*; *cochleari-imbricata*) when one part being larger than the rest and hollowed like a spoon covers all the rest, of which one will be totally inside and the other three with one margin inside and one outside;  *vexillary* (*vexillaris*) when one part, the vexillum or standard, is much larger than the others and is folded over them, they being face to face, so that the posterior part overlaps the lateral parts and the lateral parts overlap the anterior parts; *ascendent* (*ascendens*; *ascendenti-imbricata*), like *vexillary* aestivation but with anterior parts overlapping the posterior ones; *alternative* (*alternativa*) when the parts are in two whorls, the outer parts cover and alternate with the inner parts; *contorted* or *twisted* (*contorta*, *torsiva*, *convoluta*) when each part successively overlaps the one in front and is overlapped by the one behind so that each part has an inner covered margin and an outer exposed margin, the direction being to the right (*dextrorum*) or to the left (*sinistrorum*) as viewed from the outside (cf. CLOCKWISE, TWINING); *corrugated* or *crumpled* (*corrugata*) when the parts are folded irregularly together in every direction. In *plicate aestivation*

(aestivatio plicata) the whole organ (calyx or corolla) is not divided into parts but folded and sometimes also twisted lengthwise; *sepala 5 libera in aestivatione quincuncialiter imbricata*, sepals 5 free in aestivation quincuncially imbricate; *calyx 5-lobus, lobis in aestivatione valvatis*, calyx 5-lobed, with lobes in aestivation valvate; *petala in aestivatione cochleari-imbricata*, petals in aestivation cochlear; *corolla infundibuliformis limbo quinquepartito lacinis per aestivationem contortis vel valvatis*, corolla funnel-shaped with the limb 5-parted with the segments during aestivation contorted or valvate; *corolla lobis aestivatione varie imbricatis nec plicatis nec valvatis nec regulariter contortis*, corolla with lobes at aestivation variously imbricate not plicate not valvate not regularly contorted; *corolla limbo patente, lobis saepius contorto-imbricatis, sese invicem nunc dextrorum nunc sinistrorum (ab exteriore spectanti) obtegentibus, in directione contraria vel rarius in eadem directione curvis et in alabastro tortis vel fere rectis, rarissime valvatis*, corolla with limb spreading, with lobes very often contorted-imbricate, by one another in turn at one time to the right at another time to the left (from the outside viewed) overlapping, in direction opposite or very rarely in the same direction curved and in bud twisted or almost straight, most rarely valvate; *corollae lobi in aestivatione valvati*, the lobes of the corolla in aestivation valvate; *corollae loborum aestivatio helicite (sinistrorum sensu Eichleri) contorta, si imbricata lobo mediano externo, aestivation of the lobes of the corolla helically (sinistrorse in the sense of Eichler) contorted, if imbricate then the middle lobe outside*. **365-386**

*aestuans* (part. B): moving to and fro; cf. *ERRATICUS*, *OSCILLANS*.

*Aestuarium* (s.n. II): estuary, q.v.

*Aestus* (s.m. IV): tide, q.v.

*Aetas* (s.f. III. ii): age, q.v.

*affectus* (part. A): affected; *morbo affectus*, attacked by disease.

*affinis* (adj. B): neighbouring, allied to, akin to (with gen. or dat.). *Affinitas* (s.f. III. ii): affinity, relationship.

*affixus* (part. A): attached, fastened to.

*after*: post (adv. & prep.), postea (adv.).

*again*: denuo (adv.); *radii in radis minoribus denuo furcati*, rays into lesser rays again forked. *again and again*: etiam atque etiam, iterum atque iterum.

*agamicus* (adj. A), *agamus* (adj. A): asexual.

*Agar*: agar (s.m. II), *gen. sing. agari, abl. sing. agar*.

*Age* (time of life): *aetas* (s.f. III. ii), *gen. sing. aetatis, abl. sing. aetate; aetate proecta*, in advanced age. *Youth*: *juventus* (s.f. III. ii), *gen. sing. juvenitatis, abl. sing. juvente*. *young*: *juvenilis* (adj. B) 'youthful', *novellus* (adj. A) 'new', *hornus* (adj. A) and *hornotinus* (adj. A) both 'of the present year's growth, less than 12 months old'. *Maturity*, *Ripeness*: *maturitas* (s.f. III. ii), *gen. sing. maturitatis, abl. sing. maturitate*. *mature*: *maturus* (adj. A). *Old age*: *vetustas* (s.f. III. ii), *gen. sing. vetustatis, abl. sing. vetustate*, *senectus* (s.f. III. ii), *gen. sing. senectutis, abl. sing. senectute*. *aged*: *vetus* (adj. B) 'old', *vetustus* (adj. A) 'that has existed a long time', *senectus* (adj. A) 'very old', *annotinus* (adj. A) 'a year old, of last year's growth'. *Adverbs, etc., of age*: (first) *primum* (adv.), *primo* (adv.), *initio* (abl. of *initium*) 'at the beginning', *ab ineunte* (abl. part. B) 'from the beginning'; 'then, thereupon', *tum* (adv.); *deinde* (adv.); 'afterwards', *postea* (adv.); 'at last', *demum*.

*Ager* (s.m. II): field, territory, district.

*agglomeratus* (part. A): collected into a head.

*agglutinatus* (part. A): glued to, adhering as if glued together.

*aggregatus* (part. A): clustered, collected together; cf. *COACERVATUS*. **491**.

*agilis* (adj. B): active, swift-moving.

*agreeable*: *gratus* (adj. A).

*agreeing*: *congruens* (part. B), *consentaneus* (adj. A), *conveniens* (part. B.); all with dat. or *cum* with abl.

*agrestis* (adj. B): pertaining to fields or cultivated land.

*Air-chamber*: *cavernula* (s.f. I) *aeria* (adj. A); *strato cavernularum aëriarum*, with layer of air-chambers; see *AERIAL, PNEUMATICUS*.

*Akinetum* (s.n. II): akinete, non-motile spore.

*Ala* (s.f. I): wing, flange.

*Alabastrum* (s.n. II): flower bud.

*Alar cell*: *cellula* (s.f. I) *alaris* (adj. B); *cellulae alares multae magnae hyalinae auriculis instructae*, cells at basal angle of leaf many large hyaline with auricles provided; *cellulis alaribus 7-9-serialis hexagonis*, with cells at basal angle of leaf 7-9 rowed hexagonal.

*alaris* (adj. B): axillary. **463**

*alatus* (adj. A): winged. **60**

*albens* (part. B): whitened. *albescens* (part. B): becoming white, whitish.

*albidus* (adj. A): somewhat white, whit-

ish. *albus* (adj. A): white, particularly a dull rather than a glossy white; see *CANDIDUS*.

*Albumen*: *albumen* (s.n. III. vi), *acc. sing. albumen, gen. sing. albuminis, dat. sing. albumini, abl. sing. albumine, lit. 'the white of an egg'*; *endospermum* (s.n. II) *acc. sing. endospermum, gen. sing. endospermi, dat. and abl. sing. endospermo*. This store of starchy or oily food-material accompanying the embryo, by which it is absorbed during germination, instead of during seed-formation as in exaluminous seeds (*semina exalbumenta*) which lack such a separate store at maturity, may be abundant (*albumen copiosum*), or scanty (*parcum*), its substance mealy (*farinaceum*), oily (*oleosum*), fleshy, i.e. firm but easily cut (*carnosum*), mucilaginous (*mucilaginosum*) or even fluid (*liquidum*), cartilaginous (*cartilagineum*), horny (*corneum*), bony (*osseum*), hard (*durum*) or almost woody (*subligneum*), stony (*scleroideum*), solid (*solidum*), and uniform (*aequabile*), or hollow (*cavum*), with a central or ventral cavity (*cavitate centrali vel ventrali exsculptum*), or ruminant (*ruminatum*) by intrusions of the seed-coat (*picis irregularibus testae*); *albumen copiosum carnosum nec farinaceum*, albumen abundant fleshy not floury; *embryo intra albumen parcissimum mucilaginosum homotrope arcuatus*, embryo within the very scanty mucilaginous albumen in the same direction as the seed curved.

*aluminatus* (adj. A): albuminate, provided with albumen (*endosperm*). *aluminosus* (adj. A): albuminate, provided with abundant albumen.

*alcalinus* (adj. A): alkaline.

*Alcohol*: *alcohol* (s.n. III), *gen. sing. alcoholis, alcoholic*: *alcoholicus* (adj. A).

*-ales* (adj. B): nom. p. pl. suffix added to stem of name of type family to form name of order, e.g. *Leguminales* from *Leguminosae*, *Iridales* from *Iridaceae*.

*Alga*: *alga* (s.f. I), *gen. sing. algae, abl. sing. alga, nom. pl. algae, gen. pl. algarum, abl. pl. algis, lit. 'seaweed, a thing of little value'*. *algaceus* (adj. A), *algensis* (adj. B): pertaining to seaweed.

*algidus* (adj. A): cold.

*alibi* (adv.): elsewhere.

*alibilis* (adj. B): nutritious.

*alicubi* (adv.): anywhere.

*alienus* (adj. A): foreign, alien, belonging to another, not related, incongruous, different from; *genus quodammodo Asperugini affine eti habitu calycibus et nuculis alienum*, genus in a certain

although: *etsi* (conj.), *quamquam* (conj.).  
*Altitudo* (s.f. III): altitude, depth.  
altogether: *omnino* (adv.).  
*Altum* (s.n. II): a height, a depth. *altus* (adj. A): high, elevated, tall.  
*alutaceus* (adj. A): leather-coloured, pale brown.  
*alveiformis* (adj. B): trough-shaped.  
*Alveola* (s.f. I): cavity, pore, alveole.  
*alveolaris* (adj. B), *alveolatus* (adj. A): pitted, honeycombed, alveolate. *Alveolus* (s.m. II): a small cavity. 250  
always: *semper* (adv.) *nearly always*: *per-saepe* (adv.), *saepissime* (adv.).  
*amans* (part. B): loving; cf. *-PHILUS*.  
*amat* (3rd person sing. pres. indic. of *amo*): 'it loves'.  
*amarus* (adj. A): bitter.  
*amber-coloured*: *sucinacius* (adj. A), *sucineus* (adj. A), *sucineus* (adj. A).  
*ambians* (part. B): going around, surrounding.  
*ambiguus* (adj. A): doubtful, uncertain.  
*Ambitus* (s.m. IV): circumference, outline.  
*ambly-*: in *Gk. comp.*, blunt, obtuse; *amblyantherus*, blunt-anthered; *amblyanthus*, blunt-flowered; *amblyphyllus*, blunt-leaved.  
*ambo* (num. adj.): both together, the two; *amiae species distinctae sunt*, the two species are distinct.  
*Ambulacrum* (s.n. II): avenue of trees.  
*ambustus* (part. A): burned.  
*amentaceus* (adj. A): in the form of a catkin. *Amentum* (s.n. II): catkin.  
*amethysteus* (adj. A), *amethystinus* (adj. A): amethyst, violet (H.C.C. 35); also applied to colour-range between purple and violet.  
*ammo-*: in *Gk. comp.*, sand-; *ammobius*, dwelling on sand; *ammophilus*, sand-loving.  
*Amnis* (s.m. III): torrent, rapidly flowing river; cf. RIVER.  
*amoeboid*: amoeboides (adj. A).  
*amoene* (adv.): beautifully. *amoenus* (adj. A): beautiful, pleasing.  
among: inter (prep. with acc.); *inter species antillanas valde peculiaris*, among West Indian species very extraordinary: *inter omnia Vitacearum genera partitione foliorum atque forma segmentorum insignis*, among all genera of Vitaceae by the division of the leaves and the shape of the segments remarkable; cf. IN.  
*amorphus* (adj. A): shapeless, of indefinite shape.  
*amotus* (part. A): removed, withdrawn.  
*amphi-*: in *Gk. comp.*, around, double, on both sides, of two kinds; *amphibius*, living in water and on land; *amphicarpus*, producing two kinds of fruit,

e.g. aerial and subterranean; *amphigenus*, growing all round an object.  
*Amphigastrium*: *amphigastrium* (s.n. II), *nom. pl. amphigastria*, *abl. pl. amphigastria*; *amphigastria foliis aequilonga*, *ex angusta basi ovata, ad 3 profunde lunatim excisa, laciniis lanceolatis porrectis*, *amphigastria* as long as the leaves, from a narrow base ovate, to 3 deeply lunately cut, with segments lanceolate directed outwards and forwards.  
*Amphithecum*: *amphithecum* (s.n. II), *abl. sing. amphithecio*.  
*amphitropus* (adj. A): *amphitropous*, i.e. with the ovule bent so that both ends are near each other. 435  
*amplectens* (part. B): clasping. 440  
*amplexicaulis* (adj. B): stem-clasping, *amplexicaul*.  
*ampliatus* (part. A): enlarged, increased.  
*amplificatio* (s.f. III): enlargement.  
*amplus* (adj. A): ample, abundant, large, great.  
*Ampulla* (s.f. I): flask-like bladder. *ampullaceus* (adj. A), *ampullaris* (adj. B), *ampulliformis* (adj. B): flask-shaped, swollen below like a short flask.  
*amussim, ad*: according to rule, exactly.  
*amylaceous* (adj. A): starchy.  
*amylodeus* (adj. A): resembling starch, i.e. giving a blue reaction to iodine.  
*Amylum* (s.n. II): starch.  
*an* (conj.): or rather, or, or perhaps, perhaps, probably (*implies doubt*).  
*an*: in *Gk. comp.* before a vowel, without, destitute of, lacking, un-, -less (see A); *anandrus*, without stamens; *anatherus*, without anthers; *anaphus*, flowerless; *anaerobius*, able to live without free oxygen.  
*ana-*: in *Gk. comp.*, upwards, back, again, with general sense of increasing, strengthening, repeating; *anabaptistus*, renamed.  
*Analysis*: analysis (s.f. III).  
*anarhodactylus* (adj. A): same meaning as NON ARTHRODACTYLUS, q.v.  
*anastomosans* (part. B): united by running together irregularly to form a network.  
*Anastomosis* (s.f. III. vi): joining of veins or hyphae into a network; see VEINING. 241  
*Anatomia* (s.f. I): anatomy.  
*anatropous*: anatropous (adj. A).  
*anceps* (adj. B), *ancipitius* (adj. A): two-edged.  
*ancient*: antiquus (adj. A).  
*and*: et (conj.), atque (conj.), ac (conj.), -que (conj. suffix), necnon (conj.), neque non (conj.); et joins both words and sentences and is repeated between each thing connected, as *radix et folia et flores*, or left out entirely, as *radix folia*

*flores*, hence best used to connect two things, as *radix et folia*; *atque* and *ac*, which is used only before consonants, indicate a close connexion between the ideas, etc., joined, as in the celebrated *ave atque vale*, 'hail and farewell'. -que is added to the second of two words closely connected, as *foliis margine carinque laevibus* 'with leaves at margin and keel smooth', or to the last of several, as *epicalyx calyx corollaque*; *necnon* 'and also' is used for emphasis.  
*andro-, -andrus*: in *Gk. comp.*, male.  
*Androecium*: androecium (s.n. II).  
*androgynus* (adj. A): androgynous, having male and female flowers in the same inflorescence.  
*Androphorum* (s.n. II): androphore, e.g. the basal tube formed by united filaments of stamens in Malvaceae.  
*Androsorangium*: androsorangium (s.n. II).  
*Androspore*: androspora (s.f. I),  
*anemo-*: in *Gk. comp.*, pertaining to the wind; *anemophilus*, wind-loving; *anemon-* refers, however, to the genus *Anemone*; *anemonoides*, anemone-like.  
*anfractuosus* (adj. A): sinuous, spirally twisted (this meaning rare); cf. ZIGZAG. 416  
*anfractus* (part. A): winding, bending, crooked.  
*angiospermus* (adj. A): having enclosed seeds; by Linnaeus used to distinguish plants such as Scrophulariaceae which have seeds in capsules from those such as Labiate and Boraginaceae which have exposed nutlets.  
*Angle*: *angulus* (s.m. II), *abl. sing. angulo*; *spinae ad angulum 45° patentes*, spines spreading at an angle of 45°; *nervis sub angulo 45° obteunditibus*, with nerves going forth at an angle of 45°. *angled*: *angulatus* (part. A), *angularis* (adj. B); *-angled*: in *L. comp.*, -angulus, in *Gk. comp.*, -gonus; cf. YEINING. 40, 187  
*anguilliformis* (adj. B): eel-like, worm-like, i.e. long, slender, curved.  
*angularis* (adj. B), *angulatus* (part. A): angled, *angulosus* (adj. A): strongly angled, with prominent angles.  
*Angulus* (s.n. II): angle, corner.  
*angustatus* (part. A): narrowed. *anguste* (adv.): narrowly. *angusti-*: in *L. comp.*, narrow; *angustifolius*, narrow-leaved.  
*angustus* (adj. A): narrow. 178  
*Animal*: animal (s.n. III), *gen. sing. animalis*. *Animalcule*: animalculum (s.n. II), *gen. sing. animalculi*.  
*anisatus* (adj. A): flavoured or smelling of aniseed. *anisodus* (adj. A): anise-smelling.

therarum, *abl. pl.* antheris, *lit.* 'a medicine composed of flowers'; *antherae biloculares ovatae basifixae sacculis usque ad apicem connectivo conjunctis utrinque longitrorum dehiscentes*, anthers two-locular ovate basifix with sacc (thecae) up to the tip to the connective joined on each side longitudinally dehiscent; *antherarum thecae glabrae divaricatae*, of the anthers the thecae glabrous spreading abruptly at an obtuse angle; *antherarum loculi per anthesin paralleli seu divergentes usque ad basin dehiscentes*, apice plus minus coadunati, of the anthers the loculi (thecae) through anthesis parallel or divergent down to the basin dehiscent at the tip more or less united; *antherae glabrae vel lanatae sagittatae vel hippocrepiformes loculis distinctis vel apice confluentibus*, denique *rima unica deorsum usque ad medium dehiscentes, basibus saccatis*, anthers glabrous or woolly, sagittate or horseshoe-shaped with the loculi (thecae) distinct or at the tip merged together, and then by a single slit downwards to the middle dehiscent, with the bases saccate; *stamina didynamia, antheris apiculatis, thecis basi in calcar longum curvatum productis, ad fissuram ciliatis*, stamens didynamous, with anthers apiculate with thecae at base drawn out into a spur long curved, at the fissure ciliate; *antherae membrana inflexa terminatae*, anthers by membrane inflexed terminated; *antherae 2-loculares, loculis connectivo lato oblongo apice cornuto disjunctis aequalibus parallelis*, anthers 2-locular, with the loculi (thecae) by a broad oblong connective separated equal parallel; *antherae apicibus in orbem cohaerentes loculis subparallelis distinctis contiguis a basi ad apicem late apertis*, anthers by the tips into an orb cohering with the loculi (thecae) almost parallel distinct close together from base to tip wide open; *tubus stamineus cylindrus apice antheras pernitas monothecas globum formantes gerens*, staminal tube cylindric, bearing at the tip anthers many one-celled forming a glove; *antherae lineares connectivo in laminam triangularem obtusam supra loculos producta*, anthers linear with the connective prolonged into a blade triangular blunt above the loculi (thecae).

**Antheridiophore:** antheridiophorum (s.n. II), *abl. sing.* antheridiophoro.  
**Antheridium:** antheridium (s.n. II), *abl. sing.* antheridio, *nom. pl.* antheridia, *abl. pl.* antheridiis; *antherida solitaria, ad furcas secundas et tertias (rarius primas)*

*ramulorum primariorum nonnunquam ad ramulos secundarios posita, diametro 0.2 mm.*, antheridia solitary, at second and third (rarely first) forks of the primary branchlets sometimes on secondary branchlets placed, 0.2 mm. in diameter.  
**antherless:** anantherus (adj. A), anantheratus (adj. A); *stamina ananthera (staminodia) iis fertilibus alterna*, stamens without anthers (staminodes) with fertile ones alternate.  
**Anthesis** (s.f. III): anthesis, period during which flower is open; *ante anthesin*, before flowering; *sub anthesi*, at flowering; *per anthesin*, during flowering; *post anthesin*, after flowering; *anthesis peractio*, *sub finem anthesis*, at end of flowering; *anthesis initio*, at beginning of flowering; cf. EFFLORESCENTIA, FLORESCENTIA.

**Anthodium** (s.n. II): capitulum of Compositae.

**Anthoecium:** anthoecium (s.n. II); *anthoecium unum hermaphroditum*, anthoecium (spikelet) one hermaphrodite; *anthoecium inferius glumis paulo brevius vel glumas aequans vel superans*, lower anthoecium than the glumes by a little shorter or the glumes equalling or overtopping.

**anti-**: in Gk. *comp.*, against; *antidysentericus*, against dysentery; *antisyphiliticus*, against syphilis.

**antice** (adv.): in front. **anticus** (adj. A): anterior, at the front, remote from or turned away from the axis; (of anthers) introrse; (of Hepaticae leaves) on upper or dorsal side; *lobi 3, postico obtuso, anticus acutis*, lobes 3, with the posterior one blunt, the anterior ones acute; *sepulum posticum cymbiforme, sepala antica plana*, posterior sepal boat-shaped, anterior sepals flat; *sepala 2 antica ceteris paulo minora*, 2 anterior sepals than the rest a little smaller; cf. POSTICUS. 420

**antihelicte** (adv.): anti-clockwise, in a direction passing from left to right, dextrorse (in the sense of Eichler, A. Gray, etc.), sinistrorse (in the sense of de Candolle, etc.); cf. HELICTE, TWINING.

**antipetalus** (adj. A): antipetalous i.e. opposite a petal or placed upon one, not alternating with petals.

**antiquus** (adj. A): ancient, old, former.

**antrorsus** (adj. A): antrorse (directed upwards); cf. RETRORSUS.

**anularis**: see ANNULARIS. **Anulus**: see ANNULUS.

**-anus** (adj. A): suffix with sense of belonging to, connected with, pertaining

to, used to form adj. from nouns, particularly from geographical and personal names, e.g. *africanus* from *Africa*, *romanus* from *Roma*, *Lamarckianus* after Lamarck, *Hassleranus* after Hassler, *montanus* from *mons* 'mountain'.

**anvil-shaped**: incudiformis (adj. B).

**any**: ullus (adj. A). **anywhere**: alicubi (adv.). **at any time**: aliquando (adv.).

**apart**: seorsum (adv. followed by *abl.*); distans (part. B); see DISTANT, SEPARATE.

**aperiens** (part. B): opening. **Aperture**: apertura (s.f. I); cf. CHINK, FISSURE, OPENING. **apertns** (adj. A): open.

**Apertio** (s.f. III): opening, unfolding; *ante-apertio* *floris*, before the opening of the flower.

**Apertura** (s.f. I): aperture, hole, opening; cf. CHINK, FISSURE, FORAMEN, RIMA.

**apertus** (adj. A): open.

**apetalus** (adj. A): without petals.

**Apex**: apex (s.m. III. i); see TIP.

**aphyllus** (adj.): without leaves; cf. NUDUS.

**apical**: apicalis (adj. B): *cellula apicalis*, apical cell; *crescentia apicali*, by apical growth; cf. ACRANTHUS.

**apicifixus** (adj. A): attached by the apex.

**apiculatus** (adj. A): ending abruptly in a short point or apiculum. **Apiculum**: apiculum (s.n. II), *abl. sing.* apiculo. 146

**Aplanospore**: aplanospora (s.f. I).

**apo**: in Gk. *comp.*, from, away from, out of, asunder, free; *apocarpus*, with carpels free from one another; *apopetalus*, with free petals.

**Apoblastns** (s.m. II): apoblast, i.e. vigorous barben shoot resulting from cutting back.

**apodus** (adj. A): sessile, without a stipe.

**apomictic** (adj. A): apomictic.

**Apophysis**: apophysis (s.f. III. vii); see PARAPHRYSIS.

**Apothecium**: apothecium (s.n. II), *abl. sing.* apothecio, *nom. pl.* apothecia, *abl. pl.* apothecis; *apothecia lecideina sessilia rotundata ad basin leviter constricta parva 0.4 mm. crassa*, apothecia lecideine sessile rounded at base lightly constricted small 0.4 mm. thick.

**apotropus** (adj. A): apotropous.

**Apparatus**: apparatus (s.m. IV).

**apparently**: ut videtur, appreenter (adv.).

**Appearance, general**: facies (s.f. V), *abl. sing.* facie; aspectus (s.m. IV), *abl. sing.* aspecti; habitus (s.m. IV), *abl. sing.* habitu; *herba aspectu Saxifragae*, herb with appearance of a Saxifrage; *habitum similis Solano havanensi*, in appearance similar to *Solanum havanense*.

**appearing**: precise meaning should be sought, e.g. first seen (primum visum), first growing (primum crescents).

**appendiculatus** (adj. A): appendiculate, with small appendages, hanging in small fragments.

**Appendix**: appendix (s.f. III. i), *abl. sing.* appendice, *nom. pl.* appendices, *abl. pl.* appendicibus.

**applanatus** (adj. A): flattened or horizontally expanded.

**apple-green**: pomaceo-viridis (adj. B).

**applicitus** (part. A): lying upon, lying close to.

**appositus** (part. A): placed against, side by side with.

**appreciable**: evidenter (adv.), manifeste (adv.).

**appressed**: adpressus (part. A), appressus (part. A).

**apprise** (adv.): first of all, especially.

**approaching**: accedens (part. B).

**approbavit**: he has confirmed, approved, accepted as good; used of names already on herbarium sheets.

**approximately**: circa (adv.), circum (adv.), quasi (adv.).

**approximatus** (part. A): near each other, close together.

**apricot-coloured**: armeniacus (adj. A).

**Aprienn** (s.n. II): an open sunny place; *buxus amat aprica*, the box loves sunny places; *habitat in apricis*, it grows in sunny places. **apricns** (adj. A): uncovered, exposed to the sun, sunny, growing in the sunshine.

**aptus** (part. A): suitable, fit for, appropriate, able.

**apnd** (prep. with acc.): with, near, in the writings of.

**Aqna** (s.f. I): water, q.v. **Aquae** (s.f. I. pl.): medicinal springs; *Aquae Aureliae*, Baden-Baden; *Aquae Calidae*, Vichy. **aquaticus** (adj. A), *aquatilis* (adj. B): growing in water. **aqueus** (adj. A): clear as water. **Aquosum** (s.n. II): watery place. **aquosus** (adj. A): watery, full of water.

**arachnoideus** (adj. A), *araneosus* (adj. A): cobwebby.

**Arbor** (s.f. III. v): tree. **arborescens** (part. B): becoming tree-like. **Arboretum** (s.n. II): living collection of trees.

**arboreus** (adj. A): tree-like. **arboricola** (adj. A): dwelling in a tree. **Arbuscula** (s.f. I): a small tree.

**Are**: arcus (s.m. IV), *gen. sing.* arcus, *abl. sing.* arcu.

**Arch**: fornix (s.m. III), *gen. sing.* fornicis; arcus (s.m. IV), *gen. sing.* arcus.

**arched**: arcuatus (adj. A) 'curved like an arch', fornicate (adj. A) 'provided with an arch-like structure'. **arched inward**: recavus (adj. A).

**Archegoniophore**: archegoniophorum (s.n. II), *abl. sing.* archegoniophoro.

**Archegonium**: archegonium (s.n. II), *abl. sing.* archegonio.

**Archipelago**: archipelagus (s.n. II).

**arcte** (adv.), **arte** (adv.): closely, firmly, tightly.

**arctic**: arcticus (adj. A).

**artus** (adj. A), **artus** (adj. A): close, confined, tight.

**arcuatus** (part. A): curved like a bow.

**Arcus** (s.m. IV): curve, arc. 35

**Ardella**: ardella (s.f. I), *abl. sing.* ardella.

**ardesiacus** (adj. A): slate-coloured.

**Area**: area (s.f. I), *abl. sing.* area; *area hyalina circa raphem*, area hyaline around raphe.

**arefactus** (part. A): made dry, dried: *folia in statu naturali vivo patentia, in statu arefacto ad caulem appressa*, leaves in a natural living state spreading, in a dried state appressed to the stem.

**Arena** (s.f. I): sand, sandy place, sandy desert. **arenaceus** (adj. A): sandy; *saxum arenaceum*, sandstone. **arenarius** (adj. A): growing on sand, sandy. **Arenosum** (s.n. II): sandy place. **arenosus** (adj. A): full of sand.

**Areola** (s.f. I): areole, a space marked out on a surface by cracks or ridges. **areolatus** (adj. A); areolate, marked out into small usually angular spaces. **Areolation**: areolatio (s.f. III. vi), *abl. sing.* areolatione. 251

**arescens** (part. B): becoming dry.

**argenteus** (adj. A): silvery. **Argentum** (s.n. II): silver.

**Argilla** (s.f. I): clay. **argillaceus** (adj. A): clayey, growing on clay, clay-coloured, yellowish-brown. **argillosus** (adj. A): full of clay, clayey.

**argute** (adv.): sharply. **argutus** (adj. A): sharp, sharp-toothed.

**argyr-**: in *Gk. comp.*, silver-; *argyrocalyx*, with silvery calyx; *argyrophyllus*, with silvery leaves.

**aridus** (adj. A): dry, withered.

**Aril**: arillus (s.m. II), *abl. sing.* arillo, **arillatus** (adj. A): provided with an aril.

**Arillode**: arillodium (s.n. II), *abl. sing.* arillodio.

**-aris** (adj. B): suffix with sense of 'belonging to, resembling, provided with', used to form adj. from nouns, especially with stems ending in *l* or *r*, e.g. *acicularis* from *acicula* 'small needle', *orbicularis* from *orbiculus* 'small disc'.

**arisen** from: ortus (part. A), exortus (part. A). **arising**: oriens (part. B). **exoriens** (part. B), exascens (part. B); *organa sporangifera sub apice frondis*

*exorientia*, sporangium-bearing organs arising below the apex of the frond.

**Arista**: arista (s.f. I), *abl. sing.* arista, *nom. pl.* aristae, *abl. pl.* aristis; see AWN. *aristate*: aristatus (adj. A). 139

**Arm**: brachium (s.n. II). **armatus** (part. A): equipped, armed; *oculo armato*, with the eye equipped, i.e. seen under a lens.

**armeniacus** (adj. A): apricot-coloured (H.C.C. 60.9); also used as geographical epithet, pertaining to Armenia.

**aromatic**: aromaticus (adj. A).

**around**: circa, circum (adv. and prep. with acc.).

**arranged**: dispositus (part. A), ordinatus (part. A), digestus (part. A).

**Arrangement**: collocatio (s.f. III. vi), dispositio (s.f. III. vi). **Arrangement of Leaves**: phyllotaxis (s.f. III. viii); dispositio (s.f. III. vi) foliorum; situs (s.m. IV) foliorum. Leaves may be *basal* (folia basalia; folia caulinia), and possibly then in a *rosette* (folia rosulata; see ROSETTE), or *cauline*, i.e. carried on an evident stem (folia caulinia), being then *spirally arranged* (spiraliter disposita), *alternate* (alterna), possibly *two-rowed* (biseriata, disticha), *scattered* (sparsa, dissipata, dispersa), or *crowded* (aggregata, conferta), *decussate* with each node bearing two leaves at right angles to the pair below (decussata) or *whorled* (verticillata) with leaves three together (terna), four (quaterna), five (quina), six (sena) or more (vel ultra) at each node.

*caulis infra nudus vel dimidio inferiore et paucis ultra foliis paucis sparsis praeditus, tunc verticillo foliorum manifesto usque 16-folio et supra verticillum foliis parvis paucis sparsis vel raro verticillo altero paucifolio instructus*, stem naked below or for the lower half and a little more with a few sparse leaves, then furnished with a well-marked whorl of leaves up to 16-leaved and above the whorl with a few small sparse leaves or rarely another whorl of few leaves furnished;

*folia dispersa vel inferne aggregata*, leaves scattered or below crowded; *folia verticillata usque 12 folia per verticillum*, leaves whorled up to 12 leaves a whorl; *folia 5-6 in verticillo disposita*, leaves 5-6 in a whorl arranged; *caulis e basi per 4-20 cm. nudus, deinde cataphyllis 1-2, tum foliis 2-4 brevibus remotis, postremo parte media et supra verticillis foliorum usque 8-foliatis 2-4 inter se 2 cm. distantibus vestitus*, stem from the base for 4-20 cm. naked, then clothed with 1-2 cataphylls, then 2-4 short well-spaced leaves, finally in the

middle and upper part with 2-4 whorls of leaves up to 8-leaved between themselves 2 cm. apart.

**arrectus** (adj. A): set upright, pointing upwards, diverging from axis at angle of less than 30°. 387

**arrhizus** (adj. A): rootless.

**arrow-headed**: sagittatus (adj. A). 126

**arte** (adv.): see ARCTE.

**arthro-**: in *Gk. comp.*, jointed. *arthrodactylus* (adj. A): in *Charophyta*, having the ultimate rays or dactyls each composed of more than one cell.

**articulatus** (part. A): articulate, jointed.

**Articulus** (s.m. II), joint, part between nodes, segment. 235, 455

**artificatus** (adj. A): artificial, man-made.

**artificial**: *artificialis* (adj. B), *artificiosus* (adj. A), *factitius* (adj. A).

**-arum**: gen. pl. ending of s. I and adj. A f., meaning 'of'; *descriptiones planitarum novarum*, descriptions of new plants; *palmarum familia*, family of palms; *algae insularum britannicarum*, algae of the British Isles; *monographia Lobeliacearum*, monograph of the Lobeliaceae; *simiarum*, of the monkeys.

**arvalis** (adj. B), **arvensis** (adj. B): pertaining to fields or cultivated land. **Arvum** (s.n. II): arable field, cultivated land.

**as** (in the same manner): *atque* (conj.), as being, namely: *ut pote* (adv.), as being such: *pro* (prep. with abl.), as far as, reaching to: *tenus* (prep. with abl. or gen. placed after noun), as if, as it were: *velut* (adv.), as (in comparison of size): *quam* (adv.); *cellulae duplo longiores quam latae*, cells twice as long as wide. as in: *ut* (adv.); *ut in typo*, as in the type, as yet: *adhuc* (adv.).

**ascending**: *ascendens* (part. B), *assurgens* (part. B); cf. DIRECTION. 395

**-ascens** (part. B): present part. ending used in forming adj. to indicate a process of becoming but also a lack of full attainment, e.g. *purpurascens*, becoming purple, purplish.

**Ascidium** (s.n. II): pitcher, as in *Nepenthes*.

**Ascoma**: ascoma (s.n. III), gen. sing. ascomatis.

**Ascospore**: ascospora (s.f. I); see SPORE.

**Ascus**: ascus (s.m. II), *abl. sing.* asco, *nom. pl.* asci, *abl. pl.* ascis; *asci usque ad 10 in successione maturantes, sessiles globosi vel ovati, 30  $\mu$  diam, octospori aparaphysati*, ascii up to 10, in succession maturing, sessile globose or ovate, 30  $\mu$  in diameter, 8-spored without paraphyses; *ascis clavatis paraphysatis octosporis*, with ascii club-shaped accompanied by paraphyses 8-spored; *asci clavati vel fusiformes magni 1.5 mm.*

*longi octospori paraphysibus immixti*, ascii club-shaped or fusiform large 1.5 mm. long 8-spored with paraphyses intermingled.

**aseptatus** (adj. A): without septa.

**asexual**: agamicus (adj. A), agamus (adj. A), asexualis (adj. B), vegetativus (adj. A).

**aspectabilis** (adj. B): visible, worthy of being seen.

**Aspectus** (s.m. IV): appearance, aspect, view; see APPEARANCE.

**asper** (adj. A): rough, uneven, harsh, rugged. 266

**asperatus** (adj. A): rough with points or short stiff hairs. **Asperitas** (s.f. III): roughness. **Asperum** (s.n. II): uneven, rough place.

**aspergilliformis** (adj. B): brush-shaped. 239

**Aspergo** (s.f. III): spray (of water), sprinkling.

**aspersus** (part. A): see ADSPERSUS.

**aspiciens** (part. B): looking forward, facing.

**asservatus** (part. A): kept, preserved.

**assimilating**: assumens (part. B), assimilatus (adj. A), assimilans (part. B); *phaeophora in cellulis assimilantibus numerosa*, phaeophores (chromatophores) in assimilating cells numerous.

**associated**: consociatus (part. A), una cum.

**Association**: consortio (s.f. III. vi), consortium (s.n. II).

**assimilens** (part. B): taking up, receiving, assimilating.

**assurgens** (part. B): rising upwards. 395

**Aster** (s.m. III): star, starwort.

**-aster** (m.), **-astrum** (n.): in *L. comp.*, suffix to nouns indicating incomplete likeness or inferiority, often used to distinguish a wild from a cultivated kind, e.g. *oleaster*, *oleastrum*, wild olive, from *olea*, cultivated olive, *pinaster*, wild pine, from *pinus*, pine, particularly the stone-pine with edible seeds, *mentastrum*, wild mint, from *menta*, *mentha*, mint, and definitely derogatory in such words as *formaster*, dandy, *philosophaster*, bad philosopher; also suffix to adjectives in diminutive sense, e.g. *surdaster*, somewhat deaf, compared with *surdus*, deaf; see p. 305.

**asterinus** (adj. A): aster-violet (H.C.C. 38).

**astro-**, **astro-**; in *Gk. comp.*, starry, stellate; *asterocalyx*, with star-like calyx; *asterotrichus*, *astrotrichus*, with stellate hairs, stellately hairy.

**astictus** (adj. A): unsotted, spotless.

**astriktus** (part. A): drawn together, tight, narrow.

**astylus** (adj. A): without a style.

asymmetrice (adv.): asymmetrically. a-symmetricus (adj. A): asymmetric, irregular.  
 at (conj.): but, yet, but then.  
 at: in the sense of 'at which', 'place where' is expressed by *ad* (prep. with acc.), e.g. *ad basim* 'at the base', *ad extremum* 'at the end'; *in* (prep. with abl.), e.g. *in angulis* 'at the angles', or simply with the abl., e.g. *basi* 'at base'; but for places such as towns and small islands by the old locative case (the same as gen. sing. in s. I and s. II, as abl. sing. in s. III, s. IV, s. V), e.g. *Gedani*, at Danzig, *Gottingae*, at Göttingen, *Holmiae*, at Stockholm, *Lipsiae*, at Leipzig, *Lugduni*, at Lyon, *Lugduni Batavorum*, at Leiden, *Lutetiae*, at Paris, *Patavii*, at Padua, *Tiguri*, at Zurich, *Utrecht*, at Utrecht.  
 at least: *saltem* (adv.), *quidem* (adv.).  
 at present: *nunc* (adv.).  
 ater (adj. A): black, esp. dull black.  
 atomatus (adj. A): sprinkled with minute particles.  
 atque (conj.): and, q.v.  
 atrans (adj. B): darkening, *atri*, *atro*: in *L. comp.*, black, dark, q.v.; *atrolabiis*, black-lipped; *atropurpureus*, dark purple; *atrovirens*, dark green; *atri* is preferable in classical L., but *atro* in bot. L.  
 atratus (part. A): blackened, dark.  
 attached: *affixus* (part. A), with dat. or with *ad* and acc. or *in* and abl. to indicate place of attachment, *per* and acc. to indicate means by which attached.  
 attaining: *attingens* (part. B); *cellulae usque ad 12  $\mu$  diametro attingentes*, cells up to 12  $\mu$  in diameter attaining.  
 attamen (adv.): nevertheless.  
 Attempt: *tentamen* (s.n. III. vi).  
 attenuate: *attenuatus* (part. A). 131, 176  
 attingens (part. B): reaching to, attaining; *antherae labium inferius attingentes*, anthers reaching the lower lip.  
 -atus (part. A): ending of perfect part. passive of verbs with *a*- stems, the infinitive in *-are*, indicating action completed, hence 'provided with, pertaining to' and used also to form adj. from nouns. *attenuatus* 'drawn out' from *attenuo* 'make thin'; *maculatus* 'spotted' from *maculo* 'make spotted' from *macula* 'a spot'; *orbiculatus* 'circular' from *orbiculus* 'small disc'.  
 atypicus (adj. A): not typical, abnormal; cf. ABERRANS, ABNORMAL, ANOMALUS.  
 Auctor (s.c. III. v): author, writer, defender of a thesis (not necessarily its actual author) in a public disputation; cf. C. Häberlin in *Zentralbl. Biblioth.*, 43: 174 (1926).

autus (part. A): enlarged, increased, added to.  
 Augmen (s.n. III), *Augmentum* (s.n. II): increase, growth.  
 aulac-: in *Gk. comp.*, furrow; *aulacopermus*, with furrowed seeds; *aulacanthus*, having spines in furrows, the secondary rows being more prominent than the primary rows bearing the spine-cells.  
 aurantiacus (adj. A): orange (H.C.C. 12), between yellow and scarlet.  
 auratus (adj. A): flecked with gold.  
 aureolinus (adj. A): aureolin yellow (H.C.C. 3). *aureus* (adj. A): golden yellow.  
 Auricula: *auricula* (s.f. I), *abl. sing. auricula, nom. pl. auriculae, abl. pl. auriculis*.  
 auriculatus (adj. A): auriculate, i.e. furnished with ear-like appendage. 123, 168  
 auriformis (adj. A): ear-shaped.  
 auritus (adj. A): eared, auriculate.  
 Aurum (s.n. II): gold.  
 australis (adj. B): south, southern.  
 aut (conj.): or, q.v.  
 aut-, auto-: in *Gk. comp.*, self.  
 autem (conj.): on the other hand, but, nevertheless.  
 authentic: *authenticus* (adj. A), *genuinus* (adj. A), *verus* (adj. A).  
 autoicus (adj. A): autoicous, i.e. having male and female organs in separate inflorescences on the same plant.  
 Autopsia (s.f. I): personal examination.  
 Autumn: *autumnus* (s.m. II); *autumno florens*, flowering in autumn; *in serum autumnum*, in late autumn. *autumnal*: *autumnalis* (adj. B).  
 auxiliary: *auxiliaris* (adj. B).  
 available: *suppetens* (part. B), in promptu.  
 avellaneus (adj. A): hazel, nut-brown.  
 avenis (adj. B), *avenius* (adj. A): veinless, without perceptible lateral nerves and veins; opposite of *venosus*.  
 Avenue: *ambulacrum* (s.n. II).  
 aversus (part. A): turned backwards, behind, on the back; *pagina aversa*, lower side of leaf.  
 avulsum (part. A): pulled off, plucked.  
 awl-shaped: *subulatus* (adj. A), *lesiniformis* (adj. B). 114  
 Awn: *arista* (s.f. I), *abl. sing. arista, nom. pl. aristae, abl. pl. aristis*; *arista inferne tortilis*, awn twisted below; *valvula aristam terminalem simplicem emittens*, valvule putting forth an awn terminal simple; *aristae nudae seabrae*, awns naked scabrid; *gluma e sinu aristata*, *arista tenui inferne parum torta, infracta et quidam flexuosa 2-pollicari*, glume from the notch awned, with the awn thin below a little twisted bent and somewhat

flexuous 2 inches long, awned: *aristatus* (adj. A). awnless: *muticus* (adj. A). 139, 165  
 axe-shaped: *dolabiformis* (adj. B). 37  
 axialis (adj. B): axial, relating to the axis, located along the axis.  
 Axil: *axilla* (s.f. I), *abl. sing. axilla, nom. pl. axillae, abl. pl. axillis*, lit. 'armpit'; *paniculae e foliorum summorum axillis ortae*, panicles from the axils of the upper leaves arising. *axillary*: *axillaris* (adj. B), less often *alaris* (adj. B); *inflorescentia axillaris*, inflorescence axillary; *spicae terminales vel ad apicem ramorum axillares*, spikes terminal or at tip of branches axillary; *floribus axillaribus solitariis*, with flowers axillary solitary. 463  
 Axis: axis (s.m. III. vi), *acc. sing. axem or axin, abl. sing. axe, nom. pl. axes, abl. pl. axibus*; *axis mas feminine vel asexualis*, axis male female or asexual; *axis transapicalis*, transverse axis; *secus axem*, along the axis; *axes mares feminine et asexuales simplices vel ramosi*, axes male female and asexual simple or branched; *frustula circum axem apicalem torta*, frustules twisted around the apical axis.  
 azonatus (adj. A), *azonus* (adj. A): azonate, without zones.  
 azureus (adj. A): azure, pure deep blue.  
 Azygospore: *azygospora* (s.f. I).  
 B  
 Bacca (s.f. I): berry, q.v. *baccans* (adj. B): becoming juicy and berry-like, as calyx of *Coccoloba*. *baccatus* (adj. A): berry-like, pulpy. *baccifer* (adj. A): berry-bearing. *bacciformis* (adj. B): shaped like a berry. 333  
 bacillaris (adj. B), *bacilliformis* (adj. B), *baculiformis* (adj. B): rod-shaped, rod-like.  
 Back: *dorsum* (s.n. II), less often *tergum* (s.n. II); *pars a tergo visa*, part seen from the back, on the back: *dorsalis* (adj. B), at the back: *postice* (adv.).  
 back, backwards: *recessum* (adv.); in *L. comp.*, retro-; *retrocurvatus*, curved back; *retroflexus*, bent back; *retrofractus*, refracted, bent sharply backward from the base; cf. RETRORSUS.  
 Bacterium (s.n. II): bacterium.  
 bad: *malus* (adj. A). very bad: *pessimus* (adj. A). badly: male (adv.).  
 badius (adj. A): bay, reddish-brown, dull brown, chocolate-brown.  
 bald: *calvus* (adj. A).  
 balteiformis (adj. B): belt-shaped.  
 band-shaped: *vittiformis* (adj. B), *taeniatus* (adj. A), *fasciarius* (adj. A): cf. STRAP-SHAPED.  
 Basidiospore: *basidiospora* (s.f. I); cf. SPORE.  
 Basidium: *basidium* (s.n. II), *abl. sing. basidio, nom. pl. basidia, abl. pl. basidiis*; *basidia tetraspora clavata*, basidia

4-spored club-shaped; *basidios* *bisporis* *hyalinis*, with basidia 2-spored hyaline.  
**basifixus** (adj. A): attached by the base.  
**basifugus** (adj. B): developing from below upwards, i.e. away from the base (basifugal) and towards the apex (acropetal).  
**basilaris** (adj. B): basal.  
**basin-shaped**: crateriformis (adj. B), lebetiformis (adj. B), pelviformis (adj. B).  
**basiramer** (adj. A): bearing branches from the base, branched from the base.  
**Basis** (s.f. III): base, q.v.  
**basiscopicus** (adj. A): facing or directed towards the base; cf. ACROSCOPICUS.  
**Beak**: rostrum (s.n. II), *abl. sing.* rostro.  
**beaked**: rostratus (adj. A), *in L. comp.* rostris (adj. B), -rostrus (adj. A), slightly beaked: rostellatus (adj. A). 148  
**bean-shaped**: fabiformis (adj. B).  
**Beard**: barba (s.f. I). bearded: barbatus (adj. A). beardless: imberbis (adj. B).  
**bearing**: ferens (part. B), gerens (part. B), both with acc.; praeditus (part. A), instructus (part. A), both with abl.  
**-bearing**: *in L. comp.*, -fer, -ger, *in Gk. comp.*, -phorus.  
**beatus** (part. A): prosperous, blessed (used only of deceased botanists).  
**beautiful**: pulcher (adj. A), formosus (adj. A), concinnus (adj. A). beautifully: pulchre (adv.).  
**because of**: ob (prep. with acc.), propter (prep. with acc.).  
**becoming**: usually expressed by participle ending -ESCENTS or -ASCENS.  
**Bed**: lectus (s.m. II).  
**Beer**: cerevisia (s.f. I).  
**before**: ante (prep. with acc.), antea (adv.), antequam (conj.).  
**Beginning**: initium (s.n. II), *acc. sing.* initium, *abl. sing.* initio; *ad initium florendi*, at beginning of flowering; cf. ANTHESIS.  
**begoniinus**: begonia (H.C.C. 6.19), a colour near coral pink.  
**beheld**: spectatus (part. A).  
**behind**: post (prep. with acc.).  
**bell**: *in L. comp.*, campani-, *in Gk. comp.*, codon-, *campaniflorus*, *codonanthus*, bell-flowered.  
**bell-shaped**: campanulatus (adj. A), campaniformis (adj. B). *Campaniformis* means 'bell-shaped' whereas *campanulatus* means 'pertaining to a Campanula', the name *Campanula* being coined by Fuchs in 1742 for the species now called *Campanula trachelium*. But both are used for shapes agreeing with the type of corolla usual in *Campanula*, i.e. with a broad rounded base, a gradually expanded tube not more than twice as long as broad and the upper

part (corresponding to the sound bow of a church bell) diverging outwards often above a slight incurve (corresponding to the waist of a bell). For the pileus of an agaric without the campanulaceous incurve, the term *parabolicus* may be used, following Josserand. 72  
**belonging**: pertinens (part. B); *algae ad Trentepohlias pertinentes*, algae belonging to Trentepohlia.  
**below**: infra (adv. and prep. with acc.), sub (prep. with abl.), subter (prep. with abl.); *infra medium*, below the middle.  
**below-ground**: subterraneus (adj. A), hypogaeus (adj. A).  
**belt-shaped**: balteiformis (adj. B).  
**Bend**: flexus (s.m. IV). **bent**: flexus (part. A); cf. OBSTIPUS.  
**bene** (adv.): well, rightly, excellently.  
**benevole** (adv.): kindly.  
**berried**: baccatus (adj. A) 'juicy and succulent', baccifer (adj. A) 'berry-bearing'. 333  
**Berry**: baccia (s.f. I), *nom. pl.* baccae, *abl. pl.* baccis; *in class. L. usu.* baca, 'any small round fruit' baccia; *globosa 1 cm. lata polysperma pulposa acris inedulis rubra nitida fragrans calyx persistente coronata*, berry globose 1 cm. broad many-seeded pulpy acid uneatable red glossy fragrant by the persistent calyx crowned. **berry-bearing**: baccifer (adj. A). **berry-like**: baccatus (adj. A). **becoming berry-like**: baccans (adj. B).  
**beset**: *see PROVIDED WITH*.  
**betinus** (adj. A): beetroot purple.  
**better**: melior (adj. comp.), melius (adv.).  
**between**: inter (prep. with acc.).  
**beyond**: ultra (adv.), ulterius (adv.); *see TRANS-.*  
**bi**: *in L. comp.*, two-; *bilaristatus*, two-awned; *biauritus*, with two auricles; *bibracteatus*, two-bracted; *bicalcaratus*, two-spurred; *bicapsularis*, with two capsules or a two-chambered capsule; *bicarinatus*, two-keeled; *bicontortus*, twice twisted; *bicolor*, two-coloured; *biconvexus*, convex on two sides; *bicornis*, two-horned; *bicosatus*, two-ribbed; *bicurvis*, two-legged; *bicuspidatus*, with two sharp points; *bidentatus*, two-toothed; *bifacialis*, bifacial; *bifarius*, two-rowed; *bifidus*, two-cleft to about halfway; *biflorus*, two-flowered; *bifoliolatus*, with two leaflets; *bifrons*, two-faced, growing on both sides; *bifurcus*, *bifurcatus*, twice forked; *biflumis*, two-glumed; *bijugus*, with two pairs of leaflets; *bilabiatus*, two-lipped; *bilamellatus*, with two lamellae; *bilobus*, *bilobatus*, two-lobed; *bilocularis*, two-

chambered; *bimaculatus*, two-spotted; *binervis*, *binervius*, two-nerved; *binotatus*, two-marked; *biovulatus*, two-ovuled; *bipartitus*, divided almost to the base into two parts; *bipinnatus*, twice pinnate, each division of a pinnate leaf being itself pinnate; *biporus*, two-pored; *bipunctatus*, two-spotted; *birimosus*, opening by two slits; *biseptatus*, with two septa; *biserratus*, doubly serrate, the teeth being themselves toothed; *bisetus*, with two bristles; *bisexualis*, with both sexes together; *bisulcatus*, two-furrowed; *binternatus*, twice ternate, each of the three main divisions being itself divided into three parts; *biuncialis*, two inches (about 5 cm.) long; *bivalvis*, two-valved. Many analogous L. compounds are formed with the L. numerical prefixes *uni-* 'one-', *tri-* 'three-', *quadra-* 'four-', *quinqu-* 'five-', *sex-* 'six-', *septem-* 'seven-', *pauci-* 'few-', *multi-* 'many-', etc.; *see TWO*, DI.  
**biatorinus** (adj. A): biatorine, i.e. resembling lichen genus *Biatora* in having apothecium without thalline margin and with soft almost colourless excipulum.  
**bibulus** (adj. A): absorbing moisture, drinking readily, hence applicable to certain fungi; *charta bibula*, blotting paper.  
**biconjugatus** (adj. A): twice-conjugate. 217  
**biennial**: biennis (adj. B): symbol ☈ or ☈; *herba biennis*, herb biennial. 342  
**bifarium** (adv.), bifarius (adj. A): *in two rows*; cf. DISTICHUS. 488, 489  
**bigenitatus** (adj. A): twice-conjugate. 217  
**big**: grandis (adj. B), magnus (adj. A).  
**binary**: binarius (adj. A): *per fissionem binarium*, by binary fission.  
**binatum** (adv.): in pairs, by twos.  
**binatus** (adj. A): with a pair, as a leaf divided into two leaflets. 206  
**binding together**: colligans (part. B).  
**bim** (adj. num. distr. pl.): two each, paired; *cystocarpis singulis aut binis*, with cystocarps single or paired.  
**Biartitio** (s.f. III): division into two; *multiplicatio cellularum bipartitione vegetativa*, multiplication of cells by vegetative division into two.  
**bis** (adv.): twice; used as a prefix by Otto Kuntze and others in coining new generic names to replace or avoid later homonyms, e.g. *Bisgoeppertia*.  
**biscoctiformis** (adj. B): biscuit-shaped (from med. L. *biscoctus* (s.m. II) 'biscuit', the biscuit envisaged by nineteenth-cent. German botanists being apparently the finger biscuit or the Katzenzünglein kind, i.e. oblong with the ends rounded and the middle slightly constricted).  
**bistratose**: bistratus (adj. A), distri-naticus (adj. A).  
**bitrie** (warm brown colour): sepiaceus (adj. A).  
**Bit**: frustum (s.n. II).  
**bitter**: amarus (adj. A), acidus (adj. A), acer (adj. B), acerbus (adj. A).  
**-bius** (adj. A): *in Gk. comp.*, -living; *amphibius*, double-living, i.e. in water or on land.  
**black**: ater (adj. A) 'dull black', niger (adj. A) 'glossy black', anthracinus (adj. A) 'coal black'; *in L. comp.*, atri-, atro-, *in Gk. comp.*, melan-, melano-.  
**blackened**: denigratus (part. A). **blackening**: denigrans (part. B).  
**Bladder**: vesica (s.f. I), *in Utricularia* ampulla (s.f. I). **blaudery**: vesicarius (adj. A); *in Gk. comp.*, physco-. 96  
**Blade**: lamina (s.f. I), *abl. sing.* lamina, *nom. pl.* laminae, *abl. pl.* laminis.  
**blast**, **blasto**: *in Gk. comp.*, shoot.  
**blephari**, **blepharid**, **blepharo**: *in Gk. comp.*, relating to eye-lashes or eye-lids, i.e. marginally fringed with hairs, ciliated; *blepharicus*, with ciliated fruit, as in *Lathyrus* species; *blepharidanthus*, with ciliated flower; *blephariglossus*, *blepharoglossus*, with ciliated tongue; *blepharopetalus*, with ciliated petals; *blepharophorus*, bearing cilia; *blepharophyllus*, with ciliated leaves; *blepharosepalus*, with ciliated sepals; *dolichoblepharus*, with long cilia.  
**Bllepharoplast**: blepharoplastus (s.m. II).  
**blister-shaped**: pustuliformis (adj. B).  
**blood-red**: sanguineus (adj. A), sanguinolentus (adj. A), haematicus (adj. A), haematinus (adj. A), haematochrous (adj. A), haematoches (adj. B); *in L. comp.*, sanguineo-, *in Gk. comp.*, haem-, haemat-; *sanguineomaculatus*, *haematoctisticus*, with blood-red spots; cf. HAEM-.  
**Blotch**: macula (s.f. I), *abl. sing.* macula, *nom. pl.* maculae, *abl. pl.* maculis; *macula basilaris atra flavo-cincta late elliptica rotundata vel acuta 2-3 cm. longa*, basal blotch black yellow-margined broadly elliptic rounded or pointed 2-3 cm. long; *perigonum segmentis basi macula oblonga nigrescente flavo-cincta notatis*, perigon with segments marked at base with a blotch oblong blackish yellow-margined; *folia radicalia maculis majoribus confluentibus et minoribus irregulariter sparsis variegata*, leaves radical variegated with whitish blotches the larger merging together and the smaller irregularly sprinkled; *maculae*

*foliicolae rotundatae brunneo-olivaceae*, spots growing on leaves rounded olive-brown; *maculae albae farinosae parum densae aut confertae irregulares in pagina inferiori foliorum*, spots white floury not very dense or crowded irregular on lower surface of leaves; *thallus epilithicus maculas irregulares et bene limitatas albidas vel flavas haud virides formans*, thallus growing on stone forming spots irregular and well-defined whitish or yellow never green; *plagas sive maculas latas in ambitu vagas et attenuatas efficit*, it produces tracts or broad spots in outline indefinite and drawn out. *blotted*: maculatus (part. A).

*blown out*: inflatus (part. A), sufflatus (part. A).

*blue*: azureus (adj. A), caeruleus (adj. A), caesius (adj. A), cyaneus (adj. A), cobaltinus (adj. A), lazulinus (adj. A), venetus (adj. A); *in L. comp.*, caesio-, *in Gk. comp.*, cyaneo-.

*blunt*: obtusus (adj. A); *in L. comp.*, obtusi- *in Gk. comp.*, ambly-. *blunted*: obtusatus (adj. A). 153, 173

*Boat*: navicula (s.f. I). *boat-shaped*: navicularis (adj. B), naviculiformis (adj. B), cymbiformis (adj. B). 46

*Body*: corpus (s.n. III). Special terms are also used: *granum paramylaceum*, paramylon body; *gutta olei*, drop of oil, oil-body.

*Bog*: palus (s.f. III) 'marsh'; turbarium (s.n. II) 'peat-bog'. *boggy*: uliginosus (adj. A). *bombycinus* (adj. A): silky.

*bonus* (adj. A): good.

*bony*: osseus (adj. A). 322

*Book*: liber (s.m. II).

*Border*: margo (s.f. and m. III. vi); *see MARGIN*. *bordered*: marginatus (part. A), limitatus (part. A), limbatus (adj. A). *bordering*: affinis (adj. B).

*borealis* (adj. B): north, northern.

*born*: natus (part. A), genitus (part. A). *born within*: innatus (part. A), with dat. or with in and abl.

*borne*: portatus (part. A).

*Boss*: umbo (s.m. III. vi), *abl. sing.* umbone. *bossed*: umbonatus (adj. A). 20

*Bostryx*: bostryx (s.m. III).

*botanic*, *botanical*: botanicus (adj. A).

*Botanist*: botanicus (s.m. II). *Botany*: botanice (s.f. I), *gen. sing.* botanices; phytologia (s.f. I), *gen. sing.* phyto-*logiae*; *Botanice est Scientia Naturalis, quae Vegetabilium cognitionem tradit* (Linnaeus, *Phil. Bot.*, 1; 1750), botany is the natural science which transmits knowledge of plants; *botanices professor*, professor of botany.

*both*: ambo (num. adj.), duo (num.), uterque (pron.); *ambo* refers to two objects, considered as a pair, their association being assumed as known; *duo* when their association not already known, *uterque* when considered severally; *in superficiebus ambabus foliis*, on both surfaces of the leaf. *both . . . and . . .*: et . . . et. *on both sides*: utrinque (adv.), utrinsecus (adv.).

*bothr-*: *in Gk. comp.*, pit; *bothryospermus*, with pitted seeds.

*botry-, -botrys*: *in Gk. comp.*, bunch, raceme; *botryoides*, *botryoides*, like a bunch of grapes.

*Bottom*: fundus (s.m. II), *abl. sing.* fundo; imum (s.n. II), *abl. sing.* imo; infimum (s.n. II), *abl. sing.* infimo; solum (s.n. II), *abl. sing.* solo; *ab infimo*, from below; *infime*, *ad infimum*, at the bottom; *in solum maris arenosum*, on the sandy bottom of the sea; cf. *BASE*, *FUNDUS*.

*botuliformis* (adj. B): sausage-shaped. 88

*Boundary*: finis (s.f. III), *gen. sing.* finis; limes (s.m. III), *gen. sing.* limitis. *bounded*: definitus (part. A), limitatus (part. A).

*bow-curved*: arcuatus (adj. A). 35

*bowl-shaped*: crateriformis (adj. B). 81

*brachialis* (adj. B): arm-long, i.e. 2 ft. (65 cm.) long. *brachiatus* (adj. A): having decussate branches provided with arms. *Brachium* (s.n. II): arm, distance from arm-pit to tip of middle finger, hence 2 ft. (65 cm.). 427

*brachy-*: *in Gk. comp.*, short; *brachyandrus*, with short stamens; *brachyanthus*, with short flowers; *brachycarpus*, with short fruit; *brachycalyx*, with short calyx; *brachyceras*, with short spur; *brachypodus*, short-stalked.

*Brachyblastus* (s.m. II): short-shoot, spur; *brachyblasti floriferi*, flower-bearing short-shoots; *inflorescentiae a brachyblastis producatae*, inflorescences produced from short-shoots.

*brackish*: salsuginous (adj. A), salsuginosus (adj. A).

*Bract*: bractea (s.f. I), *abl. sing.* bractea, *nom. pl.* bracteae, *abl. pl.* bracteis, *lit.* 'a thin plate of metal'. *bracteae concavae obtusae virides in apice juvenili inflorescentiae diu imbricatae*, bracts concave blunt green at the young apex of the inflorescence for a long time imbricate. *bracteate*: bracteatus (adj. A). *bracteolate*: bracteolatus (adj. A). *Bracteole*: bracteola (s.f. I), *abl. sing.* bracteola, *nom. pl.* bracteolae, *abl. pl.* bracteolis.

*bran-like*: furfuraceus (adj. A).

*Branch*: ramus (s.m. II), *abl. sing.* ramo, *nom. pl.* rami, *gen. pl.* ramorum, *abl. pl.* ramis; *rami floriferi teretes tenuiter striati, in sicco nigrescentes, pube brevi adpressa vestiti*, flowering branches terete thinly striate, in a dried state blackish, with a short adpressed pubescence clothed; *ramis hornotinis teretibus striatis, pilos parcos breves gerentibus, mox glabrescentibus*, with branches of this year's growth terete striate, carrying sparse short hairs, soon becoming glabrous. *branch-bearing*: ramifer (adj. A); cf. *BASIRAMIFER*, *INFERORAMIFER*, *MEDIORAMIFER*. *branched*: ramosus (adj. A). *very much branched*: ramosissimus (adj. A). *Branching*: ramificatio (s.f. III. vi). *branching*: ramificans (part. B). 226, 227, 229

*Branchlet*: ramulus (s.m. II), *abl. sing.* ramulo, *nom. pl.* ramuli, *abl. pl.* ramulis; *ramuli primarii duplo vel triplo furcati, radiis primariis totam longitudinem ramulorum  $\frac{1}{2}$  aequantibus*, primary branchlets 2 or 3 times furcate with primary rays the total length of the branchlets  $\frac{1}{2}$  equalling; cf. *WHORL*.

*Breadth*: latitudo (s.f. III. vi), *abl. sing.* latitudine; *in processu duplo longiores latitudine corporis*, into processes twice as long as breadth of the body.

*breaking*: frangens (part. B); *see BROKEN*. *breaking apart*: rumpens (part. B). *breaking forth*: erumpens (part. B). *breaking off*: disrumpens (part. B). *breaking open*: refringens (part. B).

*brevi-*: *in L. comp.*, short; *brevispinus*, short-spined; *brevicollis*, short-necked.

*Breviarium* (s.n. II): summary, abridgment.

*brevis* (adj. B): short, of small extent. *brevissimus* (adj. A): extremely short. *breviter* (adv.): shortly, briefly.

*Brevitas* (s.f. III): shortness.

*brick-red*: latericius (adj. A), lateritus (adj. A), testaceus (adj. A).

*Bridge*: *in Silicoflagellates* ponticulus (s.m. II).

*bright*: clarus (adj. A), vividus (adj. A). *brightly*: clare (adv.), laete (adv.), vivide (adv.), splendide (adv.).

*bringing forth*: edens (part. B), efferens (part. B), pariens (part. B), gignens (part. B); cf. *PRODUCING*.

*Bristle*: seta (s.f. I), *abl. sing.* seta, *nom. pl.* setae, *abl. pl.* setis. *bristle-bearing*: setifer (adj. A). *bristle-like*: setaceus (adj. A). *bristle-shaped*: setiformis (adj. B). *bristly*: setosus (adj. A). *echinatus* (adj. A), hispidus (adj. A). 144, 227, 263

*brittle*: fragilis (adj. B), friabilis (adj. B).

*brittleness*: fragilitas (s.f. III).

*broad*: latus (adj. A); *latus factus*, made broad, broadened. *broadly*: late (adv.), very broadly: perlate (adv.).

*brochidodromus* (adj. A): brochidodrome; *see VEINING*.

*broken*: fractus (part. A), ruptus (part. A). *broken off*: effractus (part. A).

*bronze*: aeneus (adj. A).

*Brook*: rivus (s.m. II), *acc. sing.* rivum, pertaining to brooks: rivalis (adj. B). *Brooklet*: rivulus (s.m. II).

*broom-like*: scoparie (adv.), scopiformis (adj. B), scopulatus (adj. A).

*brought*: advectus (part. A), allatus (part. A).

*brown*: brunneus (adj. A), fuscus (adj. A), castaneus (adj. A), badius (adj. A), spadiceus (adj. A). *brownish*: brunneolus (adj. A); infuscatus (adj. A).

*Bruise*: contusum (s.n. II). *bruised*: contusus (part. A).

*brunneolus* (adj. B): wintry.

*brunneus* (adj. A): brownish. *brunneus* (adj. A): brown.

*brush-like*: aspergilliformis (adj. B), penicillatus (adj. A), q.v. 79, 239

*bryo-: in Gk. comp.*, relating to mosses. *Bryologia* (s.f. I): the study of mosses.

*bubalinus* (adj. A): buff.

*Bubble*: bulla (s.f. I).

*bubble-like*: bulliformis (adj. B).

*Bud*: gemma (s.f. I), *nom. pl.* gemmae, *abl. pl.* gemmis; *unopened flower*, alabastrum (s.n. II); *perigonium in alabastro globosum*, perigon in bud globose; *lobi calycis in aestivatione imbricati* *alabastrum ovatum obtusum formantes*, lobes of calyx in aestivation imbricate an ovate obtuse bud forming.

*bud-bearing*: gemmatus (adj. A), gemmifer (adj. A), gemmiparus (adj. A).

*Budding*: gemmatio (s.f. III). *budding off*: pullulans (part. B). *bud-like*: gemmiformis (adj. B).

*buff*: bubalinus (adj. A).

*Bulb*: bulbus (s.m. II), *gen. sing.* bulbi, *abl. sing.* bulbo, *nom. pl.* bulbis. The diminutives *bulbilis* and *bulbulus* are similarly declined; *bulbus ovoides* 12-15 *lineae crassus prolifer*, *bulbilis copiosis sub tunici inclusis et bulbulis foliiferis liberis circumdat*, bulb globose 12-15 lines (3-4 cm.) thick proliferous, with bulbils abounding under the tunics enclosed and by bulblets leaf-bearing free surrounded; *bulbus globosus* 1-3 *uncias diametro*, *tunicis papyraceis vestitus*, *sapore acerimo*, *bulbillis inter tunicas extiores plurimis parvis brunneis ovoides sessilibus vel filo brevi fragili stipitatis*, bulb

globose 1-3 inches (2.7-8 cm.) in diameter, with tunics papery clothed, with flavour most pungent, with bulbils between outer tunics many small brown ovoid sessile or by a short fragile thread stalked; *bulbus parvus simplex conicus, tunicus interioribus reticulatum nervatis, exterioribus castaneis reticulato-fibrosis superne in collum longum productis, bulbillo extra tunicas hornas solitario anguste conico sessili vel longe stipitato stipite usque ad unciam unam longo, bulb small simple conical with inner tunics reticulately nerved, outer chestnut-coloured reticulate-fibrous, above into a long neck lengthened out, with bulbil outside this year's tunics solitary narrowly conical sessile or long stalked with the stalk up to one inch (2.7 cm.) long; herba bulbis magnis venenatis tunicis membranaceis, herb with bulbs large poisonous with tunics membranous; bulbus squamosus (tunicis nullis) juvenile albus deinde roseus vel luci expositus purpureus, primo globosus deinde oblatus, usque ad 6 cm. altus 9 cm. latus, squamis paucis vel multis acutis in bulbo juvenili fere orbicularibus in maturo late ovatis, bulb scaly (with no tunics) youthfully white afterwards rose or when to light exposed becoming purple, at first globose later oblate, up to 6 cm. high 9 cm. broad, with scales few or many acute in the young bulb almost orbicular in the mature one broadly ovate. Bulb-plate: lectus (s.m. II), bulb-shaped: bulbiformis (adj. B). Bulbil, Bulblet: bulbilus or bulbillus (s.m. II), abl. pl. bulbilis; bulbulus (s.m. II), abl. pl. bulbilis; caulis in axillis foliorum superiorum bulbillis magnis viridibus vel brunneis praeditus, stem in axis of upper leaves with bulbils large green or brown provided; caulis bulbilifer, stem bulbil-bearing.*

Bulbotuber (s.n. III): corm.

bulbous: bulbosus (adj. A).

Bulge: protuberatio (s.f. III). bulging: protuberans (part. B), tumescens (part. B).

Bulla (s.f. I): bubble.

bullatus (adj. A): bullate, blistered or puckerred.

bulbiformis (adj. B): bubble-like.

Bundle: fascis (s.m. III), fasciculus (s.m. II).

Bung: obturamentum (s.n. II).

buried: infossus (part. A), obrutus (part. A), defossus (part. A).

Burned: ambustus (part. A), ustulatus (part. A).

Bursicule: bursicula (s.f. I), abl. sing. bursicula.

Bush: frutex (s.f. III. i), bushy: fruticosus (adj. A), dumalis (adj. B). but: sed (conj.), autem (conj.); testa distincte sed subtiliter granulata, testa distinctly but subtly granulate; testa haud granulata autem striata, testa not granulate but striate; sed usu. restricts meaning, autem emphatically introduces something different or contrary, but for (except for): praeter (prep. with acc.), but indeed: vero (adv.).

buttery: butyraceus (adj. A).

button-like: globuliformis (adj. B).

Buttresses: anterides (s.f. III pl.), gen. pl. anteridum; anterides gralliformes, stilt buttresses.

butyrateus (adj. A): buttery, butter-like.

by: 'near' ad (prep. with acc.), 'along' secundum (prep. with acc.), 'by whom or which done' a or ab (prep. with abl.), per (prep. with acc.); often expressed by abl. alone; *specimina a Linnaeo descripta*, specimens described by Linnaeus; *lamina per tuberculaciones asperata*, blade by tuberculations roughened; *dimidio minor est*, it is less by half.

bysaceus (adj. A), byssinus (adj. A.), byssoides (adj. A): byssoid, filamentous, cobwebby, made of fine threads, cottony. 237

## C

Cacumen (s.n. III. vi): peak, extreme top. caducus (adj. A): falling, dropping off early. cadens (part B): falling. 342

caelestis (adj. B): heavenly blue.

Caelum (s.n. II): the sky, the heavens; *toto caelo*, by the whole of heaven, exceedingly.

Caeoma (s.n. III): caeoma.

caeruleus (adj. A): blue, esp. the deep blue of the Mediterranean sky at midday. caeruleo-griseus (adj. A): sky grey. caerulescens (adj. B): becoming sky blue.

caesariatus (adj. A): covered with hair, long-haired.

caesius (adj. A): lavender blue (often applied by Romans to blue eyes).

Caespes (s.m. III. ii): tuft, sod of turf.

Caespitulus (s.m. II), a little tuft.

caespiticus (adj. A): made of turf, turf-like. caespitosus (adj. A), es-

pitosis (adj. A): growing in tufts or patches, caespitose. 486

caeterum, etc.: see CETERUM.

Calathidium (s.n. II), Calathium (s.n. II): capitulum of Compositae.

calathiformis (adj. B), calathinus (adj. A): cup-shaped.

Calcar (s.n. III. x): spur, hollow nectar-producing appendage of calyx or corolla. calcaratus (adj. A): spurred. calcariformis (adj. B): spur-like.

calcareus (adj. A): chalky, limy; cf. CALX; saxum calcareum, limestone. calciformis (adj. B), calceolatus (adj. A): slipper-shaped.

Calcium: calcium (s.n. II).

calculated: computatus (part. A).

Calarium (s.n. II): heated greenhouse, stove house, hot-house.

calendulinus (adj. A): marigold orange (H.C.C. 11).

calidus (adj. A): warm, hot.

calli-: in Gk. comp., beautiful; callianthus, with beautiful flowers; callicarpus, with beautiful fruits; callichromus, beautifully coloured; cf. CALO-.

callifer (adj. A), callous (adj. A): callose, bearing a callus or hardened thickening.

Callus: callus (s.m. II), abl. sing. callo; callum (s.n. II), abl. sing. callo.

calm: tranquillus (adj. A); cf. QUIETUS.

calo-: in Gk. comp., beautiful; calochromus, beautifully coloured; caloneurus, beautifully nerved; calophlebius, beautifully veined; calophyllus, with beautiful leaves; cf. CALLI-.

calvatus (adj. A), calvifactus (adj. A): made bald. calvescens (part. B): becoming bald. calvus (adj. A): bald, hairless, glabrous.

Calx (s.f. III): lime; *folia calce incrassata*, leaves encrusted with lime.

calyxiformis (adj. B): calyx-like. calyx-

inus (adj. A): belonging to the calyx, with a well-developed calyx.

calyculatus (adj. A): provided with a calyx. Calyculus (s.m. II): epicalyx, whorl of bracts below the calyx, cup-like structure at the base of the sporangium.

-calymma (s.n. III. ix): in Gk. comp., covering, veil.

Calypta: calyptra (s.f. I), gen. sing. calyptae, abl. sing. calyptra, nom. and acc. pl. calyptae, abl. pl. calyptis; *calyptra longissima conica, latere fissa, basin versus pilis onusta*, calyptra very long conical, at the side split, towards the base with hairs burdened. calyptatus

(adj. A): bearing a calyptra or cap-like covering. calyptiformis (adj. B): shaped like a conical cap.

Calyx: calyx (s.m. III. i), gen. sing. calycis, abl. sing. calyce, nom. and acc.

pl. calyces, dat. and abl. pl. calycibus; calyx cupuliformis truncatus irregulariter

fissus c. 20 mm. longus intus glaber extus parce pilosus ruber vel viridis vel flavus, venulis multis percursus, costis haud canaliculatus (adj. A): canaliculate, i.e. with a longitudinal groove or channel. 45

prominentibus, calyx cupola-shaped truncate irregularly cleft about 20 mm. long inside glabrous outside sparingly pilose red or green or yellow, traversed by many veinlets, with ribs not prominent; calyx cylindraceus 5-nervis, ore obliquobilabiato, labio postico integro, labio antico 4-dentato dentibus aequalibus acutis, calyx cylindric 5-nerved, with the mouth oblique two-lipped, with the posticus lip entire, with the anticus lip 4-toothed with equal acute teeth; calyx deciduus campanulatus, vertice truncato, sed in lobos quinque breves imbricatos semicirculares rotundatos ciliatos ad 2 mm. longos ad 3 mm. latos divisus, calyx deciduous campanulate, with the top truncate, but divided into five short imbricate semicircular rounded ciliate lobes to 2 mm. long 3 mm. broad; calyx brevis inaequaliter et obtuse 5-fidus, lacinis in aestivatione valvatis sub bacca patens, calyx short unequally and bluntly 5-cleft, with the segments valvate in aestivation, outspread beneath the berry; bracteae amplae calyce in-cludentes, bracts large enclosing the calyx; calyx tubus cylindricus extra (basi excepta) tomentosus intus glaber, tube of the calyx cylindric outside (except at base) tomentose inside glabrous; calyx segmenta rotundata, segments of the calyx rounded; calyx colorato vel viridi hirsuto vel glabro 2 cm. longo, basi attenuato, tubo corollae multo breviore, fructifero clavato, dentibus omnibus acutis, with the calyx coloured or green hairy or glabrous 2 cm. long, with the base attenuate, much shorter than the tube of the corolla, in a fruiting state club-shaped, with the teeth all enlarged.

Cambium: cambium (s.n. II).

campaniformis (adj. B), campanulatus (adj. A): campanulate; see BELL-SHAPED.

campanulinus (adj. A): campanula violet (H.C.C. 37). campanuloides (adj. B): resembling a campanula. 72

campester (adj. B), campestris (adj. B): pertaining to plains or flat areas as opposed to hills and mountains; cf. COLLINUS, MONTANUS.

campo-, campso-, campo-, campyo-: in Gk. comp., bent.

campodromus (adj. A): campodrome; see VEINING.

campylotropus (adj. A): campylotropous, i.e. with ovule curved on to its side so that the micropyle comes near the funicle.

**Canalis** (s.m. III): groove, channel, canal.  
**canarinus** (adj. A): canary yellow (H.C.C. 2).  
**cancellatus** (adj. A): latticed; cf. CLATHRATUS, CRIBRATUS. 243  
**candidus** (part. A): becoming pure white.  
**candidus** (adj. A): pure glossy white; cf. WHITE.  
**canescens** (part. B): becoming grey, greyish; cf. CANUS.  
**canino-**: in *L. comp.*, pertaining to dogs.  
**canus** (adj. A): greyish white, usu. applied to hair-covering.  
**Cap**: see OPERCULUM, PILEUS, PYXIDATUS.  
**cap-shaped**: pileatus (adj. A).  
**capable**: usu. expressed by verbal adj. ending in *-ans* or *-ens* when active, *-ibilis* or *-ilis* when passive; *cellulae divisibilis*, cells capable of division.  
**caperatus** (part. A): wrinkled.  
**capiens** (part. B): containing.  
**capillaceus** (adj. A), **capillaris** (adj. B), **capilliformis** (adj. B): capillary, hair-like, thread-like; see CAPILLUS. 50  
**Capillitium**: capillitium (s.m. II), *abl. sing.* capillitio.  
**Capillus** (s.m. II): hair, hair's width,  $\frac{1}{2}$  Paris line, 0.18 mm.  
**capitatus** (adj. A): capitate, with a knob-like head or tip. 162  
**Capitulum** (s.m. II): head, q.v.  
**Capreolus** (s.m. II): tendril.  
**capsicinus** (adj. A): capsicum red (H.C.C. 1.15).  
**capsularis** (adj. B): capsular, capsule-like.  
**Capsule**: capsula (s.f. I), *gen. sing.* capsulae, *nom. pl.* capsulae, *abl. pl.* capsulis, *lit.* 'a small box or chest'; *capsula calyce persistente paulo longior vel paulo brevior vel calycem aequans cylindracea membranacea apice in dentes 6 breves et stellatim patentes mox reflexos et revolutos dehiscens*, capsule by a little longer or by a little shorter than the persistent calyx or equaling the calyx cylindric membranous dehiscing at the tip into 6 short and stellately spreading teeth soon reflexed and revolute; *capsulae glabrae pars seminifera globosa 1 cm. alta, rostrum 2 cm. longum*, of the glabrous capsule the seed-bearing part globose 1 cm. high, the beak 2 cm. long; *capsula fusiformis 4-seminalis, retinacula parvis acutis*, capsule fusiform 4-seeded with retinacula small acute; *capsula ima basi circumcirca rumpens*, capsule at the very base all around breaking, i.e. circumscissile; *capsula clavata fere ad medium solida*, capsule club-shaped solid almost to the middle; *capsula 3-5-loocularis, valvis obtusis aut ad basin aut prope apicem sitis dehiscens*, capsule 3-5-

locular, dehiscing by blunt valves placed either at base or near the tip; *capsulae torulosae (id est circum semina dilatatae inter semina constrictae) uniloculares bivalves, valvis oblongis a basi ad apicem dehiscentes*, capsules torulose (i.e. around the seeds swollen, between the seeds constricted) one-chambered two-valved, with valves oblong from base to tip dehiscing; *capsula nutans, ab apice ad basin dehiscens*, capsule nodding, from tip to base dehiscing; *capsula erecta ovo-cylindrica, vaginula vix longior, sub ore tantillum constricta, foliis perichaetii immersa absconditaque*, capsule erect ovo-cylindric scarcely longer than the vaginule, below the mouth just a little constricted, by the leaves of the perichaetium covered and concealed.  
**capucinus** (adj. A): nasturtium red (H.C.C. 14); cf. TROPAEOLINUS.  
**Caput** (s.m. III. ii): head, in geographical names cape.  
**Carbo** (s.m. III. vi): carbon, charcoal.  
**carbonatus** (adj. A): black (and brittle) like charcoal. **carbonarius** (adj. A): pertaining to charcoal. **Carbonas** (s.m. III. ii): carbonate.  
**cardia-**, **cardio-**: in *Gk. comp.*, heart.  
**cardinalis** (adj. B): cardinal red (H.C.C. 8.22), *lit.* 'pertaining to a door-hinge'.  
**carefully**: diligent (adv.).  
**carelessly**: neglectim (adv.), negligenter (adv.).  
**carens** (part. B with *abl.*): lacking; cf. ABSENT.  
**Caries** (s.f. III): decay.  
**Carina** (s.f. I): keel, q.v. **carinalis** (adj. B): belonging to the keel; *puncta carinalia*, keel puncta. **carinatus** (adj. A): keeled. 44  
**cariosus** (adj. A): rotten, decayed.  
**carmesinus** (adj. A): crimson, q.v.  
**carmine**: carminus (adj. A), carmineus (adj. A), (H.C.C. 21); also coccineus (adj. A), carmesinus (adj. A).  
**carneus** (adj. A): flesh-coloured.  
**carnosulus** (adj. A): slightly fleshy. **carnosus** (adj. A): fleshy, succulent, soft but firm. 323  
**Caro** (s.f. III. vi): flesh; *fructus carne alba aromatica dulci*, fruit with flesh white aromatic sweet; *caro pilei pallida, odore nauseoso, sapore amaro, fracta et exsiccata flavida*, flesh of pileus pale with a sickening smell, with bitter taste, when broken and dried yellowish.  
**carp-, carpo-**: in *Gk. comp.*, relating to the fruit; see -CARPUS.  
**Carpel**: carpellum (s.m. II), carpidium (s.m. II).  
**carpicus** (adj. A): relating to the fruit.  
**Carpidium** (s.m. II): carpel.

**Carpocephalum**: carpocephalum (s.n. II), *abl. sing.* carpocephalo.  
**carpogonial**: carpogonialis (adj. B.). **Carpogonium**: carpogonium (s.n. II). **carpogonium-bearing**: carpogonifer.  
**Carpophorum** (s.m. II): carpophore.  
**-carpus** (s.m. II; adj. A), **-carpa** (s.f. I), **-carpium** (s.n. II): in *Gk. comp.*, -fruit, -fruited.  
**carried**: portatus (part. A), vectus (part. A).  
**carrot-red**: daucusinus (adj. A). **carrot-shaped**: dauciformis (adj. B).  
**carrying**: ferens (part. B), gerens (part. B); in *L. comp.*, -fer (adj. A), -ger (adj. A); in *Gk. comp.*, -phorus (adj. A).  
**cartilaginous**: cartilagineus (adj. A). Usu. means 'flexible but firm and tough', but was used by E. Fries to indicate a polished cartilage-like aspect, hence 'ce mot est un des plus beaux traits du vocabulaire mycologique'. 314  
**Caruncle**: caruncula (s.f. I).  
**caryo-**: in *Gk. comp.*, nut, nucleus.  
**Caryopsis**: caryopsis (s.f. III. ii), *abl. sing.* caryopsidibus; *caryopsis oblonga teres brunea, glumis membranaceis involuta, libera, scutello tertiam partem caryopsis aequante, hilo basali anguste elliptico*, caryopsis (grain) oblong terete brown, by glumes membranous enclosed, free, with scutellum a third part of the caryopsis equaling, with hilum basal narrowly elliptic.  
**cask-shaped**: cupiformis (adj. B), doliformis (adj. B), oculiformis (adj. B).  
**cassideus** (adj. A): helmet-shaped. **Cassis** (s.f. III): helmet, q.v.  
**cassus** (adj. A): empty, devoid of (with gen. or abl.).  
**cast off**: exutus (part A), rejectus (part A).  
**castaneus** (adj. A): chestnut-coloured, from *Castanea*, the sweet chestnut.  
**castratus** (part. A): castrated; applied to staminodes or filaments of stamens without anthers.  
**Catalogue**: catalogus (s.m. II).  
**Cataphyll**: cataphyllum (s.n. II), kataphyllum (s.n. II), contrasting with euphyllum 'true leaf'; *innovatio e duobus internodiis constans, quarum alterum breve duo cataphylla* (Niederblätter Germanorum) *opposita cito decidua, alterum longum duo euphylla* (Laubblätter Germanorum) *fert*, new shoot from two internodes consistently made, of which the short one bears two opposite quickly falling cataphylls (Niederblätter of the Germans), the other two true leaves (Laubblätter of the Germans).  
**Caulorhiza** (s.f. I): rootstock.  
**Causa** (s.f. I): cause, reason; *honoris causa*, for the sake of honour; *alimenti causa cultus*, for food cultivated.  
**causing**: efficiens (part. B).  
**Cautex** (s.f. III. vi): rough pointed rock.  
**Cave**: caverna (s.f. I), spelunca (s.f. I).  
**cavernous** (adj. A): full of hollows or cavities. **cavernula**: see AIR-CHAMBER.  
**Cavitas** (s.f. III. ii): cavity, hollow interior; *cavitatem versus*, towards the cavity.  
**Cavum** (s.m. II): a hole, cavity. **cavus** (adj. A): hollow.

cecidophorus (adj. A): gall-bearing.  
 celans (part. B): hiding.  
 celatus (part. A): hidden, concealed, q.v.  
 celeriter (adv.): quickly, with speed.  
 Cell: cellula (s.f. I), *abl. sing.* cellula, *nom. pl.* cellulae, *gen. pl.* cellularum, *abl. pl.* cellulis, *lit.* 'a small store-room or apartment'; *cellula apicalis aut supreme rotundata aut elongata conoidea acutaque*, apical cell either rounded above or elongated cone-shaped and acute; *cellulis magnis olivaceis in filis minoribus unicis, in majoribus divisione peripherica cellulae primariae pluribus zonas transversales distinctas formantes*, with cells large olive-green, in smaller filaments single, in larger ones by peripheral division of the primary cell several, forming transverse distinct zones; *folia rete pellucido, cellulis basilaribus rectangularibus ceteris hexagonis vel rhombis 25-30  $\mu$  longis 8  $\mu$  latis, parietibus rauibus flexuosis*, leaves with a pellucid network, with basal cells rectangular the others hexagonal or rhombic 25-30  $\mu$  long 8  $\mu$  broad, with the walls thin waved; *cellulis alaribus hexagonis, suprabasilaribus linearibus, ceteris quadratis, omnibus valde chlorophyllosis*, with alar cells hexagonal, those above the base linear, the rest quadrata, all containing much chlorophyll; *cellulis inter alias algas libere natantibus rectis solitariis 2-3  $\mu$  crassis*, with cells among other algae freely swimming straight solitary 2-3  $\mu$  thick; *fila e cellulis 10-20 elongatis composita*, filaments from cells 10-20 elongated made up; *dentes peristomii ad basin 3 cellulas lati*, teeth of peristome 3 cells wide at base.  
 -celled: -cellularis; *unicellularis*, one-celled; *bicellularis*, two-celled; *multicellularis*, many-celled; cf. LOCULUS.  
 cellular: cellulosus (adj. A).  
 Cellulose: cellulosa (s.f. I).  
 celsus (adj. A): high, lofty.  
 centenarius (adj. A): hundredth.  
 centi-: in L. comp., hundred-; *centifolius*, with a hundred leaves, 'actually more than can be readily counted'. *centiens* (adv.), *centies* (adv.): hundred times, hundredfold.  
 Centimetre: centimetre (s.n. II); cm.  
 central: centralis (adj. B), medius (adj. A); *ad centrum*, at the centre; *area centralis*, central area.  
 Centralium: centralium (s.n. II).  
 Centre: centrum (s.n. II) *dat.* and *abl. sing.* centro; *in centro laminae*, at the centre of the blade; *macula centrum occupans*, blotch occupying the centre; *a centro*, away from the centre.

centrifugus (adj. A): centrifugal, developing from the centre outwards.  
 centripetus (adj. A): centripetal, developing from outside towards the centre.  
 centum (num, adj. indecl.): hundred.  
 Cephalodium: cephalodium (s.n. II), *abl. sing.* cephalodio, *nom. pl.* cephalodia, *abl. pl.* cephalodiis.  
 -cephalus: in Gk. comp., -headed; *monocephalus*, with a single head; *oligoccephalus*, with few heads.  
 Cera (s.f. I): wax. *ceraceus* (adj. A): waxy, like bees-wax, wax-gold. 324  
 -ceras (s.n. III): in Gk. comp., -horn, horn-like projection.  
 cerasinus (adj. A): cherry red (H.C.C. 1.22).  
 cerato-: in Gk. comp., horned; *ceratothecus*, with horned thecae.  
 cerebriformis (adj. B): having an irregular brain-like appearance.  
 cereus (adj. A): waxen, waxy. *cerinus* (adj. A): waxy yellow, 'dull yellow with a soft mixture of reddish brown' (Lindley), wax-gold. 324  
 cernuus (adj. A): slightly drooping. 407  
 certainly: certe (adv.), nimurum (adv.).  
 certus (adj. A): definite, settled, specified.  
 cerasus (adj. A): coloured with or as white lead.  
 cespitosus (adj. A): see CAESPITOSUS.  
 cetero (adv.), ceteroquin (adv.), ceterum (adv.): for the rest, otherwise. *ceterus* (adj. A): the other.  
 -chaeta, -chaete (s.f. I): in Gk. comp., bristle, long hair.  
 chaffy: paleaceous (adj. A).  
 Chain: catena (s.f. I). *chained*, *chain-like*: catenatus (part. A). *chain-like*: cateniformis (adj. B); cf. MONILIFORMIS.  
 Chalaza: chalaza (s.f. I), *abl. sing.* chalaza.  
 chalky: calcareus (adj. A), cretaceus (adj. A).  
 chalybeus (adj. A): steel-grey.  
 chamae-: in Gk. comp., on the ground, lowly, creeping.  
 chambered: locellatus (adj. A).  
 chance, by: fortuito (adv.).  
 changed: mutatus (part. A), transmutatus (part. A), transformatus (part. A).  
 Channel: canalis (s.m. III).  
 channelled: canaliculatus (adj. A).  
 Character: character (s.m. III. v), *gen. sing.* characteris, *nom. pl.* characteres, *abl. pl.* characteribus; signum (s.n. II), *gen. sing.* signi, *nom. pl.* signa, *abl. pl.* signis; nota (s.f. I) *characteristica* (adj. A. f.); *scias characterem non constitueri genus, sed genus characterem*, characterem fluere e genere, non genus e charactere (Linnaeus, *Phil. Bot.* no. 169), know that the character does not make the genus but the genus the

character, that the character derives from the genus not the genus from the character; *characteres e distributione venarum desumpti*, characters from the distribution of the veins taken. *characteristic*: proprius (adj. A), characteristicus (adj. A). *characteristically*: proprie (adv.).  
 chartaceus (adj. A): papery. 311  
 checkered, chequered: tessellatus (adj. A).  
 cheil-, cheilo-: in Gk. comp., lip-.  
 Cheilocystidium: cheilocystidium (s.n. II), *nom. pl.* cheilocystidia, *abl. pl.* cheilocystidiis.  
 cherry-red: cerasinus (adj. A).  
 chestnut-coloured: castaneus (adj. A).  
 chief: primarius (adj. A). *chiefly*: imprimis (adv.) 'in the first place', praesertim (adv.) 'put foremost, especially', praecipue (adv.) 'especially, particularly, taken first', maxime (adv.) 'in the highest degree', maxima pro parte (adv. phrase) 'for a very large part', apreme (adv.) 'at the very first'.  
 -chilus (adj. A): in Gk. comp., -lipped.  
 Chink: rima (s.f. I), fissura (s.f. I); see CRACK.  
 chion-: in Gk. comp., snow-.  
 -chiton (s.m. III): in Gk. comp., covering, coat, tunic.  
 chlamyd-: in Gk. comp., wearing a cloak or mantle.  
 Chlamydospore: chlamydospora (s.f. I), *abl. sing.* chlamydospora, *nom. pl.* chlamydospores, *abl. pl.* chlamydosporis.  
 Chlamys (s.f. III): in Gk. comp., cloak, mantle, covering.  
 chlor-, chloro-: in Gk. comp., green; *chloranthus*, green-flowered; *chlorocarpus*, green-fruited; *chloroleucus*, greenish-white; *chlorophyllus*, green-leaved; *chlorophratus*, with a green spathe; *chlorostictus*, green-spotted; *chloroxanthus*, greenish-yellow. These and similar Latinized Gk. comp. are used only as epithets.  
 cibarius (adj. A): relating to food; cf. EDULIS. *Cibus* (s.m. II): food.  
 cicatricatus (adj. A): scarred. 252  
 cicatricosus (adj. A): covered with scars.  
 Cicatrix (s.f. III. i): scar.  
 ciliate: ciliatus (adj. A). 285  
 Cilium: cilium (s.n. II), *abl. sing.* cilio, *nom. pl.* cilia, *gen. pl.* ciliorum, *abl. pl.* ciliis.  
 Ciocinnum: cincinnus (s.m. II), *acc. sing.* cincinnum, *abl. sing.* cincinno.  
 cinctus (part. A): encircled, girdled, enclosed.  
 cinerascens (part. B): greyish, becoming ash grey. *cinereus* (adj. A): ash grey.  
 cingens (part. B), circumdatus (part. A): surrounding, encircling, girdling.  
 Cingulum: cingulum (s.n. II).  
 cinnabarinus (adj. A): vermillion (H.C.C. 18).  
 cinnamens (adj. A): smelling of cinnamon.  
 cinnamomeus (adj. A): cinnamon-coloured, 'light brown mixed with yellow and red' (Lindley). *cinnamominus* (adj. A): of cinnamon.  
 circa (adv.), circiter (adv.), circum (adv.): around, in the neighbourhood, near,

about, approximately. *circa*, *circiter*, *circum* (all three prep. with acc.): near to, around. *circumcirca* (adv.): all around. *circinalis* (adj. B), *circinatus* (part. A): coiled inwards from the tip. *circinatum* (adv.): in a coiled manner. 379, 417. *circularis* (adj. B): circular. *circulatum* (adv.): circulary. *Circulus* (s.m. II): circle; cf. *ORBIS*. 110. *circum, circumcirca*: see *CIRCA*. *circumdat*: see *CINGENS*. *Circumference*: ambitus (s.m. IV), *circumferentia* (s.f. I), *circumscriptio* (s.f. III. vi), *peripheria* (s.f. I). *circumnexus* (part. A): wrapped around, surrounding. *circumscissilis* (adj. B), *circumscissus* (part. A): circumscissile, opening by a complete transverse split cutting off the top like a cap or lid; *capsula supra medium circumscissa, operculo deciduo*, capsule above the middle circumscissile, with the lid deciduous. *Circumscriptio* (s.f. III. vi): boundary, outline, circumference. *circumtextus* (part. A): woven all round. *cirratus* (adj. A), *cirratus* (adj. A), *cirrosus* (adj. A), *cirrosus* (adj. A): tendrilled, ending in a narrow curled or wavy appendage. *cirriformis* (adj. B): tendrill-like. *Cirrus* (s.m. II), *Cirrus* (s.m. II): tendrill, lit. 'curl of hair'. 142. *cis* (prep. with acc.): on this side. *cis*: in geographical comp., on this side of, i.e. nearest the writer; in *regionibus cis- et transbaicalensis*, in regions this side (west) and the other side (east) of Lake Baikal; *cisalpinus*, this side (south) of the Alps. *Cisterna* (s.f. I): cistern, reservoir. *cito* (adv.): quickly, speedily, soon. *citriformis* (adj. B): lemon-shaped. *citrinus* (adj. A): lemon yellow (H.C.C. 4). *viridis citrinus*: citron green (H.C.C. 1.63). *City*: urbs (s.f. III), gen. sing. *urbis*; cf. TOWN. *clad-, -cladus* (s.m. II): in *Gk. comp.*, branch, shoot. *cladocarpus* (adj. A): cladocarpous, with fruit terminating a short special branch. *Cladode*: cladodium (s.m. II); see *PHYLLOCLADE*. *Cladophyll*: cladophyllum (s.n. II); see *PHYLLOCLADE*. *Clamp-connexion*: *fibula* (s.f. I), *abl. sing. fibula*, *nom. pl. fibulae*, *abl. pl. fibulis*; *hyphae fibulis nullis*, hyphae with no clamps; *hyphis fibulatis*, *hyphis fibuligeris*, with hyphae possessing clamps. The term *colligatio* (s.f. III) *unciformis* (adj. B), nom. pl. *colligationes unciniformes*, has also been used.

*clare* (adv.): clearly. *clasping*: *amplectens* (part. B), *adligans* (part. B). 440. *Class*: *classe* (s.f. III. vii), *abl. sing. classi or classe, nom. pl. classes, abl. pl. classibus*. *clathratus* (adj. A): latticed or pierced with openings like a grating or trellis; cf. *LATTICED*. *clausus* (part. A): closed, q.v. *clavate*: *clavatus* (adj. A). 9. *clavi-*: in *L. comp.*, club, cudgel; *claviflorus*, with club-shaped flowers; *claviformis*, club-shaped; *clavipes*, with club-shaped pedicel. 9. *Clavis* (s.f. III. vii): key, series of statements of contrasting characters arranged to facilitate identification. For kinds, see *R.H.S. Dict. Gard. Suppl.*, 251-3 (1956); in *clavi*: in the key. *Clavula* (s.f. I): a little club, club-like receptacle of *Clavaria*; *clavula filiformis tenax* 10 mm. *longa fistulosa ochroleuca*, club thread-like tough 10 mm. long fistular yellowish. *Claw*: *unguis* (s.m. III. xii), *abl. sing. ungue, nom. pl. unguis, abl. pl. unguibus*. *clawed*: *unguiculatus* (adj. A). *Clay*: *argilla* (s.f. I). *clay-coloured*: *argillaceus* (adj. A). *clayey*: *argillaceus* (adj. A), *argillosus* (adj. A). *clean*: *mundus* (adj. A). *cleansed*: *repurgatus* (part. A). *clear*: *liquidus* (adj. A), *pellucidus* (adj. A), *hyalinus* (adj. A). *clearly*: *clare* (adv.), *perspicue* (adv.), *manifeste* (adv.). *Cleft*: *fissura* (s.f. I); see *CRACK*. *cleft*: *fissus* (part. A). *cleistocarpus* (adj. A): cleistocarpous, i.e. with fruit breaking open irregularly, not by a lid or valves. *cleistogamus* (adj. A): cleistogamous, i.e. fertilized within the unopened flower. *-clemia* (s.n. III), *-clemus* (adj. A): in *Gk. comp.*, twig, branch, shoot. This has been used to form a number of adjectival terms for description of Charophyta; *gymnocalmus*, with ecorcate branchlets; *heteroclemus*, having more than one form of branchlet in the same whorl; *homoclemus*, having all branchlets in the same whorl alike; *leptoclemus*, with slender branchlets; *macroclemus*, with large branchlets; *microclemus*, with small branchlets; *orthoclemus*, with straight branchlets; *pachyclemus*, with thick branchlets; *phloeoclemus*, with corticate branchlets; *spanioclemus*, with few branchlets; *streptoclemus*, with twisted branchlets. *-cles*: in *Gk. comp.*, famous for, noted for, endowed with.

*Cliff*: *scopulus* (s.m. II), *praeruptum* (s.n. II). *climaticus* (adj. A): climatic. *climbing*: *scandens* (part. B); see *TWINING*. *Clinandrium*: *clinandrium* (s.n. II), *abl. sing. clinandrio*. *clinging* closely: *adhaerens* (part. B), *haerens* (part. B), *cohaerens* (part. B). *Clivus* (s.m. II): slope of a hill; *clivorum*, of the slopes, growing on slopes. *Clock*: *horologium* (s.n. II), *lit. 'a water-clock or sun-dial'*. *clockwise*: *secundum horologii motum, helicte, sinistrorum extus vis. anti-clockwise, conter-clockwise*: *contra horologii motum, anti-helicte, dextrorum extus vis.*; see *TWINING*. *Clone*: *clon* (s.m. III), *acc. sing. clonem, gen. sing. clonis, nom. pl. clones*. *close together*: *approximatus* (part. A), *confertus* (part. A), *creber* (adj. A); see *COMPACTLY, CONTRACTUS*. *closed*: *clausus* (part. A), *inapertus* (adj. A), *impervius* (adj. A), *reconditus* (part. A), *praeclusus* (part. A). *closely*: *arte* (adv.), *arcte* (adv.). *clothed*: *vestitus* (part. A). *clothing*: *investiens* (part. B), *vestiens* (part. B). *Clothing*: *vestimentum* (s.n. II), *indumentum* (s.n. II). *Cloud*: *nubes* (s.f. III). *clouded*: *nebulosus* (adj. A). *cloudy*: *nubilus* (adj. A). *Club* (cudgel): *clava* (s.f. I). *club-shaped*: *clavatus* (adj. A), *claviformis* (adj. B). *club*: in *L. comp.*, *clavi*, in *Gk. comp.*, *coryne*, *corno*; *claviger*, *corynephorus*, club-bearing; *clavistamineus*, *corynestemon*, with club-shaped stamen. *Clump*: *caespites* (s.m. III) 'turf sod', *fasciculus* (s.m. II) 'little bundle'. *Cluster*: *fasciculus* (s.m. II). *clustered*: *fasciculatus* (adj. A); cf. *CROWDED*. 487, 491. *clypeatus* (adj. A): shaped like the circular Roman shield (*clypeus*), as distinct from the oblong or oval shield (*scutum*); see *SHIELD-SHAPED*. 26. *coacervatus* (part. A): heaped together; cf. *CUMULATUS*. 491. *coactus* (part. A): felted. *coadnatus* (part. A): united, fused together; see *JOINED*. 454. *coaetaneus* (adj. A): of the same age, i.e. appearing or maturing at the same time as leaves and flowers; *folia radicalia coaetanea linearia*, leaves radical appearing with the flowers linear; cf. *HYSTERICANTHUS, PRAECOX, PROTERANTHUS, SYNANTHUS*. *coalescens* (part. B): uniting together by growth. *coalitus* (part. A): united by growth. 454. *coaretatus* (part. A): pressed together, close-set, narrowed. *coarse*: *grossus* (adj. A). *coarsely*: *grossa* (adv.); *folia grosse serrata*, leaves coarsely serrate. *Coast*: *ora* (s.f. I), *acc. sing. oram, nom. pl. orae, acc. pl. oras*; cf. *SEA-SHORE*. *Coat*: see *TUNIC*. *cobaltinus* (adj. A): cobalt blue (H.C.C. 44). *cobwebby*: *arachnoideus* (adj. A), *araneosus* (adj. A), *byssaceus* (adj. A). *coccineus*: deep red, from scarlet to carmine (H.C.C. 21) and crimson (H.C.C. 22); cf. *CRIMSON*. *Coccolith*: *coccolithus* (s.m. II). *Coccus*: *coccus* (s.m. II), *abl. sing. cocco, nom. pl. cocci, abl. pl. coccis*. *cochleariformis* (adj. B): concave like a spoon, spoon-like, cochlear in aestivation. 386. *cochleatus* (adj. A): coiled like a snail's shell. 15. *-codon* (s.m. III): in *Gk. comp.*, bell, e.g. *Codonopsis, Platycodon*; *Platycodonis*, of *Platycodon*. *coelospermus* (adj. A): hollow-seeded, i.e. having a seed or seed-like fruit hollowed out on one side. *Coenobium* (s.n. II): colony, lit. 'cloister, convent'; cf. *COLONY*. *coenocyticus* (adj. A): possessing a cell with many nuclei or a filament without septa between nuclei. *Coenocytum* (s.n. II): *coenocyte*. *coeruleus*: see *CAERULEUS*. *coetaneus*: see *COAETANEUS*. *coffeatus* (adj. A): coffee-coloured, i.e. the brown of roasted coffee beans. *cognatus* (adj. A): related. *cognitus* (part. A): known, investigated, understood; *novarum et minus cognitarum stirpium descriptiones*, of new and little-known plants the descriptions; *species minus cognita*, a species little known; *species minus cognitae*, some species little known; *monographia tabulis omnium specierum haec tenus cognitarum illustrata*, monograph illustrated with plates of all species up to this time known. *cohaerens* (part. B): clinging together, cohering. *Cohaerentia* (s.f. I): coherence. 454. *Cohort*: *cohors* (s.f. III). *Coil*: *spira* (s.f. I); cf. *SPIRAL, TURN*. *coiled inwards*: *circinatus* (adj. A). 417. *-cola* (s.f. I; adj. A. f.): -dweller; exists only in *L. comp.* such as *agricola* (countryman), *monticola* (mountaineer); used adjectively in such comp. as *ruricola* (dwelling in the country) but

then treated as a noun in apposition the same for all genders even though the generic name is m. or n. despite the use by some authors of *-colus*, *-cola*, *-colum* as adjectival endings; cf. *INCOLA*.

*cold*: *frigidus* (adj. A), *gelidus* (adj. A), *aligidus* (adj. A).

*collapsing*: *collabens* (part. B). *collapsed*: *collapsus* (part. A).

*Collar*: *collum* (s.m. II), q.v.

*collateralis* (adj. B): standing side by side. *collected*: *lectus* (part. A). *Collection*:

*collectio* (s.f. III. vi). *collective*: *collectivus* (adj. A). *Collector*: *collector* (s.m. III).

*collenchymatosus* (adj. A): *collenchymatos*, i.e. elongated and having the walls thickened at the angles; cf. *TRIGONES*.

*colliculosus* (adj. A): covered with little rounded or hillock-like elevations.

*colligans* (part. B): binding together.

*Colligatio* (s.f. III): ligature, fastening, clamp. *colligatus* (part. A): joined together.

*collinus* (adj. A): pertaining to hills. *Collis* (s.m. III. vii): a hill.

*Collocatio* (s.f. III): arrangement, a putting together. *collocatus* (part. A): placed (used in relation to other objects).

*Collum* (s.n. II): neck, neck-like prolongation of organ, collar; *collum-cygnis*, neck of a swan, an epithet applied to *Aerangis* and *Psittacanthus* species; *tunica in collum elongatum producta*, tunic into a long neck drawn out.

*colonial*: *colonialis* (adj. B). *Colony*: *colonia* (s.f. I), *acc. sing. coloniam*, *abl. sing. colonia*, *nom. pl. coloniae*, *abl. pl. coloniis*; *coloniae atrae hypophyllae effusae*, colonies black on the lower side of leaves outspread; see *PLAGULA*, *COENOBIUM*.

*Colour*: *color* (s.m. III. v), *gen. sing. coloris*, *abl. sing. colore*, *nom. pl. colores*, *abl. pl. coloribus*; see Chapter XVIII); *petala paene vel omnino ejusdem coloris quam sepala*, petals almost or quite the same colour as the sepals; *sine colore*, without colour. *changing colour*: *allochromous* (adj. A), *mutabilis* (adj. B), *versicolor* (adj. B). *coloured*: *coloratus* (part. A), *fucatus* (part. A), *pictus* (part. A). *-coloured*: *in L. comp.*, *-color* (adj. B), *in Gk. comp.*, *-chromous*, *-chromus*; *unicolor*, one-coloured; *bicolor*, *dichrous*, two-coloured; *concolor*, of the same colour; *discolor*, *heterochromous*, of different colours; *multicolor*, *polychromus*, many-coloured; see *VARIEGATED* and under *individual colours*.

*colourless*: *incolor* (adj. B), *incoloratus* (adj. A), *achromaticus* (adj. A), *achromus* (adj. A), *sine colore*; cf. *TRANSPARENT*.

*Colpus* (s.m. II): *colpus*.

*Columella*: *columella* (s.f. I), *gen. sing. columellae*, *abl. sing. columella*.

*Column*: *columna* (s.f. I), *gen. sing. columnae*, *abl. sing. columna*; *in Gk. comp.*, *-stele*; *columna-Trajana*, Trajan's Column, an epithet applied to a *Pachyceerus*.

*Columnar*: *columnaris* (adj. B). *Column*, an epithet applied to a *Pachyceerus*.

*Coma* (s.f. I): *coma*, i.e. hair-tuft on some seeds, tuft of leaves at top of an inflorescence, leafy crown of a palm tree; *semen fusiforme 3 mm. longum coma alba vel flava*, seed fusiform 3 mm. long with hair-tuft white or yellow. *comalis* (adj. A): *comal*, relating to a *coma*.

*Comb*: *pecten* (s.m. III. vi); *pecten-simiarum*, monkey's comb; see *PECTEN*.

*comb*: *in L. comp.*, *pectini*, *in Gk. comp.*, *cten*, *cteno-*; *pectinifer*, comb-bearing; *ctenopetalus*, with petals cut like a comb. *comb-like*: *pectinatus* (adj. A). 200

*Combinatio* (s.f. III): a joining two by two; *combinatio nova*, abbrev. *comb. nov.* or *n.c.*, nomenclatural new combination usually made by transferring an epithet from one generic name to another, often to displace one in common use.

*combinatus* (part. A): combined, united. *comesus* (part. A): devoured, eaten up. *coming forth*: *oriens* (part. B), *prodiens* (part. B), *proveniens* (part. B).

*Comitatus* (s.f. IV): county. *comitatus* (part. A): accompanied, attended.

*Commentarium* (s.n. II), *Commentarius* (s.m. II): commentary, exposition, annotation.

*commiscens* (part. B): intermingling. *commissural*: *commissuralis* (adj. B). *Commissure*: *commissura* (s.f. I), *abl. sing. commissura*, *nom. pl. commissurae*, *abl. pl. commissuris*.

*common*: *communis* (adj. B) 'possessed by several' as of an organ covering others, *vulgaris* (adj. B) 'occurring in plenty, ordinary', *pervulgatus* (part. A) 'very common'. *commonly*: *plerumque* (adv.), *vulgo* (adv.). *in common*: *communiter* (adv.), *conjunctim* (adv.). *comosus* (adj. A): bearing a tuft of hairs or leaves, *lit.* 'with much or long hair'. In Pliny, 'with many leaves'.

*compact*: *compactus* (part. A); cf. *CLOSE TOGETHER*, *CONDENSATUS*, *CONTRACTUS*, *SPISSUS*. *compactly*: *confertim* (adv.), *spisse* (adv.).

*Compages* (s.f. III): structure, a joining together; cf. *FABRICA*, *STRUCTURA*.

*compaginatus* (part. A): packed closely one over the other.

*comparable*: *comparandus* (adj. A). *comparatively* (adv.): relatively, comparatively.

*Comparison*: *comparatio* (s.f. III): *ex comparatione*, from a comparison.

*complanatus* (part. A): flattened out (usu. in one plane). *complanus* (adj. A): on the same plane, flush with.

*complens* (part. B): filling.

*complete*: *completus* (part. A) *lit.* 'filled full', *totus* (adj. A) 'all'. *completed*: *effectus* (part. A). *completely*: *omnino* (adv.), *penitus* (adv.), *perfecte* (adv.).

*complex*: *complexus* (part. A), *tortuosus* (adj. A).

*complicatus* (part. A): folded upon itself.

*compluriens* (adv.), *compluries* (adv.): several times.

*composite*: *compositus* (part. A): put together, made up, united, compound. 203, 482

*compressus* (part. A): flattened, usually laterally; cf. *COMPLANATUS*. 30

*con-*: see under *CUM*.

*concatenatus* (part. A): linked, connected, joined.

*concavus* (adj. A): concave, curved inwards, hollowed out; cf. *RECAVUS*.

*concealed*: *absconditus* (part. A), *tectus* (part. A), *occultus* (part. A), *celatus* (part. A), *reconditus* (part. A).

*concentric*: *concentricus* (adj. A).

*Conceptacle*: *conceptaculum* (s.n. II) *lit.* 'a receptacle'; *conceptacula lateralia* *sphaerica* *sporas globosas purpureas* *foventia*, conceptacles lateral spherical the spores globose purple cherishing (enfolding); *conceptaculis sphaericis* *scus ramulos vel ad eorum basim sessilibus*, with conceptacles spherical along the branchlets or at the base of these sessile.

*concerning*: *de* (prep. with abl.).

*Concha* (s.f. I): shell of a mollusc. *conchatus* (adj. A), *conchiformis* (adj. B): shell-shaped, like the half-shell of a bivalve mollusc.

*concinnus* (adj. A): neat, pretty, elegant.

*concolor* (adj. B), *concolorans* (adj. B), *concolorus* (adj. A): of the same colour (as the subject of comparison), uniform in colour, of one colour throughout.

*concomitans* (adj. A): attended, accompanied, associated.

*concretus* (part. A): grown together, hence 'with the prevailing idea of uniting, and generally of soft or liquid substances which thicken', compound, condensed, hardened, thickened; *fila intricata inter se* *varie concreta*, filaments entangled

between themselves variously grown together.

*Conculca* (s.f. I): convariety, group of cultivars.

*condensatus* (part. A): condensed (used of inflorescences with numerous flowers on short pedicels, hence very close to the axis).

*Condition*: *status* (s.m. IV); cf. *STATE*.

*conditus* (part. A): stored.

*conduplicatus* (part. A): conduplicate, i.e. folded together lengthwise. 371

*Condylus* (s.m. II): condyle, in drupes of *Menispermaceae* a projection of the endocarp into the seed-cavity, around which projection the seed is moulded.

*Cone* (fruit of *Coniferae*): *strobilus* (s.m. II); see *STROBILE*. *Cone* (solid figure): *conus* (s.m. II). *cone-bearing*: conifer (adj. A). *cone-shaped*: *conicus* (adj. A), *conoideus* (adj. A). *cone-like*: *strobilaceous* (adj. A), *strobiliformis* (adj. B), *strobilinus* (adj. A); cf. *OB.*

*confectus* (part. A): made complete by.

*conferruminatus* (part. A): fused, joined together; cf. *JOINED*.

*confertim* (adv.): compactly, close together, densely. *confertus* (part. A): pressed close together, crowded, densely. 483

*confervaceus* (adj. A), *confervoideus* (adj. A): composed of loose filaments resembling genus *Confervae*.

*confestim* (adv.): immediately, speedily.

*confictus* (part. A): formed by, fabricated. *confidit* to: *limitatus* (part. A, with *ad* and *acc.*).

*confinis* (adj. B): bordering on, adjoining. *conflatus* (part. A): produced, melted together, united; *frondes cellulis paucipluristratis conflatae*, fronds with cells in few to many layers united.

*confluens* (part. B): confluent, running together, blended into one; *folia maculis plusminus confluentibus conspersa*, leaves with spots more or less confluent sprinkled. 454

*Conformatio* (s.f. III): shape, form; *ex conformatio disci*, according to the shape of the disc; cf. *STRUCTURE*.

*conformis* (adj. B): agreeing closely, of the same shape as.

*confus* : *confus* (part. A).

*Congener* (s.m. II): member of the same genus.

*congestus* (part. A): crowded together.

*conglomeratus* (part. A): clustered, often spherically. 491

*conglutinatus* (part. A): glued together, united firmly together.

*congruens* (part. B): agreeing with, corresponding to (used with *dat.* or *cum* with *abl.*).

**conical**: conicus (adj. A); *see CONE-SHAPED*. **conically**: conice (adv.).  
**Conidiophore**: conidiophorum (s.n. II), nom. pl. conidiophora, abl. pl. conidiophorophis; *conidiophora simplicia recta*, conidiophores simple straight.  
**conidial**: conidicus (adj. A).  
**Conidium**: conidium (s.n. II), abl. sing. conidio, nom. pl. conidia, abl. pl. conidiis; *conidium hyalinum vel brunneum septatum*, conidium hyaline or brown septate; *conidia ovata vel obovata, in floccis peculiaribus erectis acrogena, nuncque in monilia contigae catenata, nunc et multo rarius solitaria, parce aut copiosius genita, semper autem candida et levissima*, conidia ovate or obovate, on special erect floccs acrogenous, and sometimes in necklaces closely linked, sometimes and much less often solitary, sparsely or more copiously produced, always white and quite smooth.  
**conifer** (adj. A): cone-bearing, coniferous; *ad lignum arborum coniferarum*, on wood of coniferous trees.  
**Coniocyst**: coniocysta (s.f. I), abl. sing. coniocysta; *see CYST*.  
**Conjugation**: conjugatio (s.f. III), gen. sing. conjugationis; copulatio (s.f. III), gen. sing. copulationis; *cellulae post conjugationem*, cells after conjugation.  
**conjugatus** (part. A), conjunctus (part. A): joined, connected, (*in Charophyta*) with antheridia and oogonia (sporophydia) at the same nodes, coupled. 225  
**conjunctivus** (adj. A): connecting, serving to unite.  
**conjugens** (part. B): conjugating, fusing; *tubus conjugens*, conjugating tube.  
**counatus** (part. A): connate, fused so as not to be separated without injury. 444  
**connected**: connexus (part. A), consociatus (part. A); cf. JOINED.  
**Connective**: connectivum (s.n. II), abl. sing. connectivo; *antherarum connectivum crassum glabrum vel dorso barbatum*, of the anthers the connective thick glabrous or on the back bearded; *antherae connectivo crasso glabro vel dorso barbato*, anthers with the connective thick glabrous or on the back bearded; *antherae introrsae, loculis longitudinaliter dehiscentibus intus contiguis dorso connectivo lato sejunctis*, anthers introrse, with the loculi (anthers-cells) longitudinally dehiscing on the inside touching on the back by a broad connective separated; *connectivum lineariforme postice ascendens loculum perfectum* (i.e. fertile) ferens, *antice dejectum vel porrectum loculum cassum* (i.e. sterile) rarius perfectum ferens vel

*nudum acutum*, connective linear-filiform, at the front ascending a perfect (i.e. fertile) loculus carrying, at the back descending or straight a loculus empty (i.e. sterile) more rarely perfect carrying or naked acute; *connectivum supra antheram dilatatum*, connective above anther enlarged; *connectivum ultra loculos productum*, connective beyond the loculi continued.  
**connexus** (part. A): connected.  
**connivens** (part. B): connivent, coming in contact, converging. 429  
**conoideus** (adj. A): almost conical. 2  
**consentaneus** (adj. A): agreeing with, suited to.  
**conservatus** (part. A): preserved, kept safe; cf. ASSERVATUS.  
**consequently**: itaque (adv.).  
**considerably**: aliquantum (adv.); cf. MUCH.  
**similis** (adj. B): similar in all respects.  
**Consistentia** (s.f. I): texture, consistence.  
**consisting of**: constans (part. B) ex (with abl.).  
**consociatus** (part. A): united, closely associated; connected.  
**Consocies** (s.f. III): cluster; *consocies glandularum*, gland-field.  
**Consortio** (s.f. III. vi), **Consortium** (s.n. II): community, company, fellowship, association: *in consortio algarum*, in company of algae, i.e. associated with algae.  
**Conspectus** (s.m. IV): survey, short general view.  
**conspersus** (part. A): sprinkled.  
**conspicue** (adv.): remarkably, conspicuously. **conspicuus** (adj. A): striking, remarkable, conspicuous.  
**constans** (part. B): constant, uniform, consistent, consisting of (with *ex* and abl.).  
**constantly**: constanter (adv.), perpetuo (adv.).  
**constatus** (part. A): composed of.  
**constipatus** (part. A): crowded closely together.  
**constitutus** (part. A): constituted, arranged, fixed; cf. COMPOSITUS.  
**constricted**: constrictus (part. A), contractus (part. A). **Constriction**: constrictio (s.f. III), abl. sing. constrictione; strictura (s.f. I), abl. sing. strictura.  
**constructed**: constructus (part. A) constructus (part. A), exstructus (part. A), fabricatus (part. A).  
**consumens** (part. B): consuming, devouring, destroying.  
**consutus** (part. A): joined together.  
**contained**: contentus (part. A); *materia contenta*, contents.  
**containing**: capiens (part. B); continens (part. B); *fructus oleum essentiale* continens, fruit containing essential oil.

**contaminatus** (part. A): polluted, contaminated, impure.  
**Contents**: contentum (s.n. II), abl. sing. contento, nom. pl. contenta; contentus (s.m. IV), abl. sing. contentu, nom. pl. contentus; cf. CONTAINED.  
**contentus** (part. A): contained, held together.  
**contextus** (part. A): woven together, put together, constructed. **Contextus** (s.m. IV): hyphal mass between upper surface and subhymenium or trama of pileus, *lit. connexion*; cf. SUBSTANCE.  
**contiguus** (adj. A), contingens (part. B): touching, adjoining, neighbouring.  
**continens** (part. B): containing, holding together.  
**continentalis** (adj. B): continental, relating to mainland as distinct from islands.  
**continuus** (adj. A): continuous, uninterrupted, non-septate. 501  
**contorted**: contortus (part. A), *lit. 'powerful, vehement, involved'*. 383  
**contortuplicatus** (adj. A): entangled, intricate.  
**contra** (adv. & prep. with acc.): against, opposite to, facing.  
**contractile**: contractilis (adj. B); *vacuola contractilis*, contractile vacuole; cf. PULSANS.  
**contractus** (part. A): drawn together into a narrow space, compressed, narrowed, contracted.  
**contrarius** (adj. A): in an opposite direction, opposite, contrary; cf. CONTRA-VERSUS.  
**contributing**: donans (part. B), contribuens (part. B).  
**controlled**: gubernatus (part. A), q.v.  
**Contusum** (s.n. II): bruise. **contusus** (part. A): bruised.  
**Conus** (s.m. II): cone, q.v.  
**Convariety**: convarietas (s.f. III), nom. pl. convarietates; conculta (s.f. I), nom. pl. concultae.  
**conveniens** (part. B): agreeing.  
**converging**: convergens (part. B), *to ad* (with acc.), *from ab* (with abl.), connivens (part. B); cf. CONNIVENT.  
**conversus** (part. A): changed round, reversed; cf. OB-.  
**convexus** (adj. A): convex, curved outwards. In class L. both *convexus* and *concavus* were used in the sense of 'vaulted, arched, curved'.  
**convolutus** (part. A): convolute, rolled up longitudinally; cf. VERNATION. 368, 402  
**copiose** (adv.): plentifully, abundantly.  
**copiosus** (adj. A): well-supplied, abounding, plentiful.  
**Copper-engraving**: icon (s.f. III) in aes incisa; *see ILLUSTRATION*.

**coppery**: cupreus (adj. A), cuprinus (adj. A).  
**copro-**: *in Gk. comp.*, relating to dung, excrement; *coprophilus*, living on dung; *see DUNG*.  
**Copula** (s.f. I): intercalary band of diatom.  
**Copulatio** (s.f. III): conjugation, q.v.  
**coralliformis** (adj. B): coral-like in form.  
**corallinus** (adj. A): coral red. **coralloides** (adj. B): of coral, coral-like.  
**Corculum** (s.n. II): plumule.  
**cordatus** (adj. A): cordate, i.e. with two equal rounded lobes at base, *lit. 'of good heart, wise, prudent'*. **cordiformis** (adj. B): heart-shaped. 122, 166  
**coriaceous** (adj. A): coriaceous, leathery.  
**Corium** (s.n. II): skin, rind, covering. 312  
**Cork**: suber (s.n. III. v), gen. sing. suberis, abl. sing. subere, *corky*: suberosus (adj. A) (not to be confused with *suberosus*, slightly erose). 317  
**Corm**: cormus (s.m. II), abl. sing. corme, nom. pl. cormi, abl. pl. cormis, *lit. 'a trunk'*; for the solid bulb-like stem-base of monocotyledons, the older authors, e.g. Ker-Gawler, used *bulb-tuber*; *cormus magnus sub-globosus 5 cm. crassus, tunicus brunneis membranaceis*, corm large almost globose 5 cm. thick, with tunics brown membranous.  
**Corner**: angulus (s.m. II).  
**cornus** (adj. A): horny, hard and close-textured but not brittle. 320  
**Cornfield**: seges (s.f. III. ii), pertaining to cornfields: *segetalis* (adj. B).  
**cornflower blue**: cyaninus (adj. A), also *cyaneus* (adj. A).  
**corniculatus** (adj. A): with a small horn-like appendage, curved in the form of a horn. **Corniculum** (s.n. II): small horn-like appendage. 55  
**-cornis** (adj. B), **-cornutus** (adj. A): *in L. comp.*, -horned; *bicornis*, two-horned; *tricornis*, *tricornutus*, three-horned.  
**Cornu** (s.n. IV): horn, horn-like process, spur; *cornu bovis*, horn of an ox; *cornu caprae*, horn of a she-goat; *cornu cervi*, horn of a deer; *cornu damae*, horn of a fallow deer. **cornutus** (adj. A); horn-shaped. 55  
**Corolla**: corolla (s.f. I), acc. sing. corollam, gen. sing. corollae, dat. sing. corollae, abl. sing. corolla, nom. pl. corollae, acc. pl. corollas, gen. pl. corollarum, abl. pl. corollis; *corolla rotata tubulosa infundibuliformis vel campanulata, intus glabra pilosa vel villosa*, corolla rotate tubular funnel-shaped or campanulate, on the inside glabrous pilose or villos; *corolla (tubo subnullo) explanata quadrifida bilabiata*, corolla (with an almost non-existent tube) outspread four-cleft two-lipped; *corolla flava, medio 6 mm.*

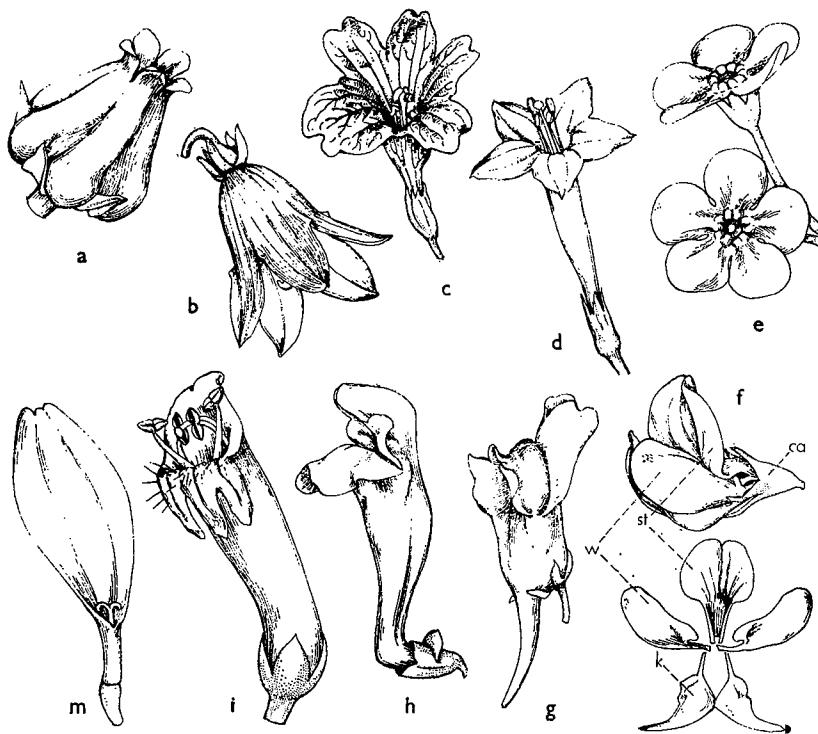


Fig. 34 Types of Corolla

a, urceolatus; b, campanulatus; c, infundibularis; d, hypocrateriformis; e, rotatus; f, papilionaceus (ca, calyx; st, vexillum; w, alae; k, carina); g, personatus basi calcaratus; h, bilabiatus tubo basi geniculato superne dilatato; i, bilabiatus tubo fere cylindrico; m, ligulatus (drawing by Marion E. Ruff, from G. H. M. Lawrence, *Taxonomy of vascular Plants*; 1951)

*crassa, ad faucem ampliata*, corolla yellow, at the middle 6 mm. thick, widened at the throat; *stamina tot quot corollae lobii iisque alterna, fauci vel tubo corollae affixa*, stamens as many as the lobes of the corolla and alternate with these, attached to the throat or tube of the corolla; *filamenta corollae adnata*, filaments adnate to the corolla.

**corollaceus** (adj. A): corolla-like, petaloid, coloured and shaped like a corolla.

**corollatus** (adj. A): provided with a corolla.

**corolliflorus** (adj. A): having the calyx, corolla and ovary inserted on the disc and the stamens inserted on the corolla.

**corollinus** (adj. A): corolla-like, belonging to the corolla, inserted on the corolla.

**Corona**: corona (s.f. I), *acc. sing. coronam*, *gen. sing. coronae*, *abl. sing. corona*; *corona magna infundibuliformis alba vel flavescens margine sexlobata*, corona large funnel-shaped white or yellowish at the margin six-lobed; *coronae rudimentum 3 mm. longum*, of the corona the rudiment 3 mm. long; cf. PARASTAS.

**coronans** (part. B): crowning, coronatus (part. A): crowned.

**coronarius** (adj. A): coronary, of a wreath, suitable for garlands. 468

**coroniformis** (adj. B): having the form of a corona or coronula.

**Coronula**: coronula (s.f. I), *gen. sing. coronulae*, *abl. sing. coronula*; *coronula persistens 0.7 mm. lata, 0.4 mm. alta*,

coronule persistent 0.7 mm. broad, 0.4 mm. high.

**Corpus** (s.n. III): body.

**Corpusculum**: corpusculum (s.n. II).

**corrected**: emendatus (part. A).

**correctly**: rite (adv.).

**corresponding to**: congruens (part. B), consentaneus (adj. A).

**corrugatus** (part. A): corrugated, crumpled irregularly, furrowed or in folds. 375

**Cortex** (s.m. III. i): bark, cortex or substantial outer layer. **corticalis** (adj. B), **corticaceus** (adj. A): cortical. **corticatus** (adj. A): covered with bark, a cortex or (in Lichens) a continuous layer of hyphal tissue, corticate, coated. 318

**Cortina**: cortina (s.f. I).

**Corymb**: corymbus (s.m. II), *abl. sing. corymbo, gen. sing. and nom. pl. corymbo*, *abl. pl. corymbis*, lit. a cluster of flowers or of fruits, particularly ivy-berries; *corymbus terminalis 10 cm. latus*, corymb terminal 10 cm. broad; *corymbi flores omnes fertiles conformes*, of the corymb the flowers all fertile alike; *capitula in corymbum disposita*, heads in a corymb arranged. **corymbose**: corymbosus (adj. A). **corymbosely**: corymbose (adv.).

**cosmopolitan** (adj. A): world-wide.

**Cost**: impensa (s.f. I), sumptus (s.m. IV).

**Costa** (s.f. I): midrib, costalis (adj. B): relating to the midrib. **costatus** (adj. A): ribbed, having one or more primary veins or ridges; *see VEINING*. 344

**cottony**: gossypinus (adj. A), byssaceus (adj. A), q.v.

**Cotyledon**: cotyledon (s.f. III. vi), *abl. sing. cotyledone*, *nom. pl. cotyledones*, *abl. pl. cotyledonibus*; *cotyledones magnae crassae aequales (vel una maiore) carnosae liberae sed arce contiguae radicula brevis vel brevissima longiores*, cotyledons large thick equal (or with one larger) fleshy free but tightly touching than the short or most short radicle longer; *embryo rectus*, *cotyledonibus angustis liberis radicula brevi vel brevissima longioribus*, embryo straight, with cotyledons narrow free than the short or most short radicle longer; *cotyledones breves obtusae non raro cum radicula in massam homogeneam carnosam coaliatae*, cotyledons short blunt not rarely with the radicle into a fleshy homogeneous mass fused; *embryo cotyledonibus conferruminatis*, embryo with cotyledons fused together.

**counterfeiting**: mentiens (part. B).

**crispatus** (part. A), **crispus** (adj. A): crimped, irregularly waved and twisted, kinky, curled. 185

**Crista** (s.f. I): crest, terminal tuft; *crista galli*, cock's comb, an epithet applied to species of *Corydalis*, *Erythrina*,

**covered**: tectus (part. A), obtectus (part. A), obductus (part. A), velatus (part. A); cf. EXPOSED. **covering**: tegens (part. B), obtegens (part. B), obducens (part. B).

**Crack**: rima (s.f. I), *abl. sing. rima, nom. pl. rimae, abl. pl. rimis*, fissura (s.f. I), *abl. sing. fissura, nom. pl. fissurae, abl. pl. fissuris*.

**cracked**: rimosus (adj. A). minutely cracked: rimulosus (adj. A).

**craspedomus** (adj. A): *see VEINING*.

**crassiusculus** (adj. A): moderately thick.

**crassus** (adj. A): thick. 326

**Crater** (s.m. III): bowl.

**crateriformis** (adj. A): bowl-shaped, i.e. hemispherical and concave. 81

**cream-coloured**: cremeus (adj. A) 'a very pale greyed yellow' (H. A. Dade), cremicolor (adj. B), eburneus (adj. A) 'ivory'.

**creber** (adj. A): close, pressed together, frequent, numerous. **crebro** (adv.): in close succession, often, repeatedly.

**creeping**: repens (part. B), reptans (part. B), serpens (part. B).

**cremeus** (adj. A): cream-coloured, q.v.

**Cremocarp**: cremocarpium (s.n. II), *abl. sing. cremocarpio*.

**Crena** (s.f. I): rounded tooth on leaf-margin, etc. **crenatus** (adj. A): crenate, having rounded teeth, scalloped. **crenulatus** (adj. A): crenulate, having small rounded teeth. 181

**crescens** (part. B): growing.

**crest-shaped**: lunaris (adj. B), lunatus (adj. A). 124

**Crest**: crista (s.f. I); *in Gk. comp., loph-, lophio-, lopho-crested*: cristatus (adj. A) 57

**cretaeus** (adj. A): chalky, chalk-white.

**cretus** (part. A): increased, enlarged.

**Crevice**: rima (s.f. I), fissura (s.f. I).

**cribratus** (adj. A), **cribrosus** (adj. A): sieve-like, profusely perforated, with numerous small holes; cf. LATTICED.

**crimson**: carmesinus (adj. A), kermesinus (adj. A), also coccineus (adj. A). These words together with 'carmine' all derive ultimately from the names of the oak-dwelling cochineal insects, in L. *coccum*, from Gk. *kokkos* 'berry', and Persian *qirmiz*, cognate with Sanskrit *kr̥mīs* 'worm' and L. *vermis* 'worm', whence French 'vermillon', English 'vermilion'; *See Chapter XVIII*.

**Crinis** (s.m. III): the hair. **crinitus** (adj. A): having tufts of long weak hairs.

Polygala, Rhinanthus, etc. *cristatus* (adj. A): crested. 57  
*croceus* (adj. A): saffron yellow (H.C.C. 7), cadmium yellow, from the stigmas of *Crocus sativus*.  
*Cross*: *crux* (s.f. III. i), *gen. sing. crucis*, *abl. sing. cruce*. cross-shaped: *cruciatus* (adj. A), *cruciformis* (adj. B). cross-wise: *cruciatus* (adv.).  
*Cross-beam*: *transtrum* (s.n. II).  
*Cross-wall*: *septum* (s.n. II), *abl. sing. septo*, *nom. pl. septa*, *abl. pl. septis*.  
*Crowd*: *turba* (s.f. I). crowded together: *aggregatus* (part. A), *coarctatus* (part. A), *coacervatus* (part. A), *confertus* (part. A), *congestus* (part. A), *constipatus* (part. A), *creber* (adj. A), *conglomeratus* (part. A), *catervatim* (adv.). 483  
*crowned*: *coronatus* (part. A). crowning: *coronans* (part. B). 468  
*cruciatus* (adv.): cross-wise. *cruciatus* (adj. A), *cruciformis* (adj. B): cross-shaped.  
*crudus* (adj. A): raw, uncooked, immature.  
*cruentus* (adj. A): blood-stained.  
*crumbling*: *fatiscens* (part. B).  
*crumpled*: *corrugatus* (part. A).  
*Crus* (s.n. III. iv): leg.  
*crushed*: *obtritus* (part. A).  
*Crusta* (s.f. I): crust, upper surface of pileus of an agaric or thallus of a lichen; *pileus crusta resinosa laccata nitent tectus*, pileus with a crust resinous varnished shining covered. *crustaceus* (adj. A): hard, thin and brittle, as the thin closely adhering thallus of a lichen, crust-like forming a crust. 313  
*Crux* (s.f. III. i): cross; *crux maltae*, *crux malitensis*, Maltese cross.  
*crypt-*, *crypto-*: in Gk. comp., covered, hidden, concealed.  
*cryptogamicus* (adj. A), *cryptogamus* (adj. A): cryptogamic, relating to cryptogams.  
*Cryptosome*: *cryptosoma* (s.n. III. ix), *nom. pl. cryptosomata*, *abl. pl. cryptosomatibus*.  
*Crystal*: *crystallum* (s.n. II); *thallus crystallis minutis quartzicis obtectus*, thallus with crystals minute quartz-like covered. *crystalline*: *crystallinus* (adj. A).  
*cteno-*, *cteno-*, *-ctenium* (s.n. II): in Gk. comp., comb, e.g. *Ctenolophon* 'comb-crest', *Pithecoctenium* 'monkey's comb'.  
*cubical*: *cubicus* (adj. A), *cubiformis* (adj. B). 8  
*Cubitus* (s.m. II): elbow, cubit, ell, the distance from the elbow to the tip of middle finger, 1½ feet, approx. 46 cm.  
*cubitalis* (adj. B): 1½ feet long.  
*cucullatus* (adj. A): hooded. *Cucullus* (s.m. II): hood.

*cujus* (gen. sing. of *qui*): of which, whose. *cujusvis* (m.), *cujavis* (f.), *cujunvis* (n.): of any one; *folia cujusvis rami variabilis*, leaves of any one branch variable.  
*Culm*: *culmus* (s.m. II), *abl. sing. culmo*, *nom. pl. culmi*, *abl. pl. culmis*; *culmus cum panicula 2-3 pedalis erectus*, culm including panicle 2-3 feet high erect; *culmi erecti vel basi leviter geniculati* robusti glabri teretes simplices vel ramosi glauchi multinodes, internodes 20 cm. vel ultra longis, culms erect or at base somewhat abruptly bent robust glabrous terete simple or branched glaucous many-noded, with internodes 20 cm. or more long; *gramina culmis erectis simplicibus vel ramosis, ad genicula sericeo-barbatis, cetero glabris*, grasses with culms erect simple or branched, at nodes silkily bearded, for the rest glabrous.  
*Culmen* (s.n. III. vi), *Culmen superius*: crownshaft, trunk-like extension of top of palm trunk formed by erect petiole-bases enclosing terminal bud; cf. *Gentes Herb.*, 7: 178 (1946).  
*Cultigen*: *cultigenum* (s.n. II), *nom. pl. cultigena*. *Cultiplex*: *cultiplex* (s.m. II), *nom. pl. cultiplices*. *Cultivar*: *cultivarietas* (s.f. III), *nom. pl. cultivarietes*; *cultivar* (s.n. III), *nom. pl. cultivaria*, cultivated: *cultus* (part. A); cf. *SATIVUS*. *Cultivation*: *cultura* (s.f. I); cf. *FIELD*, *GARDEN*, *NURSERY*, *SEED-LIST*. *Culture*: *cultura* (s.f. I); in *cultura vetustioribus*, in older cultures; in *cultura pura in agaro Bristolii*, in pure culture on Bristol's agar.  
*cultratus* (adj. B): cultrate, i.e. shaped like a knife-blade, the sides parallel with length to breadth about 6 to 1; essentially the same as *loratus*. *cultriformis* (adj. B): 'curved like a short wide scimitar' (H. N. Dixon).  
*cum* (conj.), *quum* (conj.): when, while, whereas, although, then; cf. *TUM*.  
*cum* (prep. with abl.): with, together with, along with. In compounds before *b*, *m*, *p* the earlier form *com-* is preserved, as in *combinatio*, *commissura*, *compositus*, but it becomes *cor-* before *r*, as in *corrugatus*, *corruptus*, and often *col-* before *l*, as in *collectio*, *collegium*, and *con-* before most consonants, as in *concolor*, *condensatus*, *confertus*, *congestus*, *conspicuus*, and is contracted to *co-* before *h* and vowels, as in *coarctatus*, *cohaerens*. Its effect is to indicate bringing together or intensification or completion; *stamina cum antheribus 5 mm. longa*, stamens together with (including) anthers 5 mm. long; *stylus*

*cum stigmate 4 mm. longus*, style together with the stigma 4 mm. long; *calyx in parte inferiore cum ovario connatus*, calyx in lower part with (to) the ovary connate; *ovarium cum disco confluens*, ovary with (into) disc confluent; *cum descriptione latina*, with (having) Latin description; *specimen jamaicense cum typo e Cuba bene congruens*, Jamaican specimen with type from Cuba well agreeing; *specimibus omnino cum descriptione Kunthii convenientibus*, with specimens entirely with (to) the description of Kunth conforming.  
*cumulatus* (part. A): heaped; cf. *COACERVATUS*. *Cumulus* (s.m. II): heap, pile.  
*cunctanter* (adv.): slowly, with delay.  
*cuneate*: *cuneatus* (adj. A), *cuneiformis* (adj. B), broadly cuneate: late *cuneatus* (adj. A). narrowly cuneate: *anguste cuneatus*, with leaves at base broadly or narrowly cuneate. 113, 175  
*Cup*: *cupula* (s.f. I), *abl. sing. cupula*, *nom. pl. cupulae*, *abl. pl. cupulis*; *cupulae minutissimae 0.5-1 mm. in vivo at exsiccatae vix 0.3 mm. crassae hemisphaericae vel obconicae viridi-caeruleolescentes gelatinosae glaberrimae*, cups very minute 0.5-1 mm. thick in a living state but scarcely 0.3 mm. when dried hemispherical or obconical of greenish bluish colour gelatinous quite glabrous; see *ACORN-CUP*. *cup*: in L. and Gk. comp., *calath-*, *cotyl-*, *cyath-*, *cymbio-*, *scyph-* (all of Gk. origin but adopted and latinized by Romans); in L. comp. *only acetabul-*, *pocul-*, in Gk. comp. *only peli-*. L. *calix* on account of its resemblance to the loan-word *calyx* (Gk. *καλύξ*) should not be used.  
*cup-shaped*: *cupulatus* (adj. A), *calathinus* (adj. A), *cyathiformis* (adj. B), *poculiformis* (adj. B); cf. *OLLIFORMIS*. 74, 83  
*cupelliformis* (adj. B): like a little cask.  
*cupiformis* (adj. B): cask-shaped, tubular; cf. *BARREL-SHAPED*, *DOLIFORMIS*.  
*cupola-shaped*: *cupuliformis* (adj. A). 75  
*cupreus* (adj. A), *cuprinus* (adj. A): coppery.  
*Cupula*: *cupula* (s.f. I): see *ACORN-CUP*, *CUP*.  
*Curator*: *custos* (s.c. III).  
*curiosus* (adj. A): careful, diligent, inquisitive, curious (in the seventeenth- and eighteenth-century sense, not of modern booksellers' catalogues); *rhabarbarologia seu curiosa rhabarbari disquisitio*, *illius etymologiam differentiam locum natalem formam temperamentum vires detegens*, 'rhubarbology' or an assiduous

blue. *cyaninus* (adj. A): cornflower blue (H.C.C. 1.42).  
*cyath-*: in *Gk.* and *L. comp.*, cup; *cyathifer*, *cyathophorus*, cup-bearing; *cyathiflorus*, with cup-shaped flowers. *cyathiformis* (adj. B): cup-shaped, a little wider at the top than the bottom. 74  
*Cyathium*: *cyathium* (s.n. II), gen. sing. *cyathii*, abl. sing. *cyathio*, nom. pl. *cyathia*, abl. pl. *cyathiis*, gen. pl. *cyathiorum*; *cyathium primarium masculum*, *cyathia secundaria bisexalia*, cyathium primary male, cyathia secondary bisexual; *herba cyathiis in cymam unitis vel in cymas usque 8 apice caulis dispositis*, cyathia in one cyme or in up to 8 cymes at tip of stem arranged.  
*cyclicus* (adj. A): coiled into a circle, relating to a circle. *cyclicalis* (adj. B): rolled up circularly. *cyclo-*: in *Gk. comp.*, circular. *-cyclicus*: in *Gk. and L. comp.*, whorled.  
*cygneus* (adj. A): relating to swans, curved suddenly downwards like a swan's neck. *Cygnus* (s.m. II): swan; *collum cygni*, swan's neck; *fluvius cygnorum*, river of swans, i.e. Swan River Colony, Western Australia.  
*Cylinder*: *cylindrus* (s.m. II). *cylindric*: *cylindraceus* (adj. A), *cylindricus* (adj. A), *cylindratus* (adj. A). *cylindrically*: *cylindrice* (adv.).  
*Cyma* (s.f. I): woody durable persistent boat-like spathe or spathe-valve of palm, *lit.* 'a boat'.  
*cymbiformis* (adj. B): boat-shaped. 46  
*Cyme*: *cyma* (s.f. I), gen. sing. *cymae*, abl. pl. *cyma*, nom. pl. *cymae*, abl. pl. *cymis*, *lit.* 'young sprout of cabbage'.  
*Cypselia*: *cypselia* (s.f. I).  
*Cyst*: as technical term, *cysta* (s.f. I), gen. sing. *cystae*, abl. sing. *cysta*, nom. pl. *cystae*, gen. pl. *cystarum*, abl. pl. *cysts*; in *Gk. comp.*, *cysto-* as prefix, e.g. *Cystopteris*, but *-cystis* (s.f. III), gen. sing. *-cystis*, abl. sing. *-cysti*, nom. pl. *cysts*, abl. pl. *cystibus* as final element, e.g. *Macrocystis*. This unexpected divergence probably arose through confusion or association of *L. cista* (*Gk. κύτη*) 'box, chest' and *Gk. κυτίς* 'bladder'.  
*Cystidium*: *cystidium* (s.n. II), nom. pl. *cystidia*, abl. pl. *cystidiis*; *cystidia numerosa, praesertim prope aciem lamellarum, 40-80 x 5-10  $\mu$  fusiformia projecta, ad apicem incrustatione succinea ornata*, cystidia numerous, especially at edge of gills, 40-80  $\mu$  long by 5-10  $\mu$  wide fusiform projecting, at the tip with amber-coloured incrustation ornamented; *cysti-*

*tiis numerosis projicientibus fusiformibus, haud clavatis, tenuiter tunicatis laevisibus hyalinis*, with cystidia fusiform, not clavate, thinly tunicate smooth hyaline. Buller, *Researches on Fungi*, 3 (1924), distinguished *caulocystidia* on the stipe, *cheilocystidia* at the edge of a gill, *pilocystidia* (for which Fayod's term *dermatocystidia* is preferable) on the surface or pellicle of the pileus and *pleurocystidia* on the side of a gill; see also Josserand, *Descr. Champign.*, 195 (1952).  
*Cystocarp*: *cystocarpium* (s.n. II).  
*Cystolith*: *cystolithus* (s.m. II), abl. pl. *cystolithis*; *folia cystolithus supra minutis punctiformibus subitis creberrimis breviter linearibus quaquaversus directis crassiusculis albidis*, leaves with cystoliths on upper side minute punctiform on lower side very numerous shortly linear to all directions set rather thick whitish.

*cyto-* in *Gk. comp.*, relating to the cell (from *κύτος*, 'receptacle'): *Cytologia* (s.f. I): cytology. *Cytoplasma* (s.n. III. xi): cytoplasm; cf. *PROTOPLASM*.

## D

*dacryoideus* (adj. A): dacryoid, tear- or pear-shaped, from a broad rounded end tapering to a pointed end.

*Dactyl*: *dactylus* (s.m. II), nom. pl. *dactyli*, abl. pl. *dactylis*; *dactyli plerumque inaequales interdum omnes abbreviati 2- (vel interdum 3-) cellulares*, dactyls (ultimate rays of branchlets in *Charophyta*) commonly unequal sometimes all abbreviated; *dactyli 2-cellulati quam radii penultimati paulum longiores*, dactyls 2-cellled than the penultimate rays a little longer.

*dactyl-*: in *Gk. and L. comp.*, finger-; *dactylifer*, finger-bearing; *dactylocarpus*, with fruit like a finger; *dactyloides*, finger-like. *dactylinus* (adj. A), *dactyloides* (adj. A): divided into finger-like structures.

*daedaleus* (adj. A): marked with sinuous intricate lines, or irregularly plaited, or with the mouth or apex irregularly jagged or ragged. 160

*Damage*: *laesio* (s.f. III); cf. *INJURY*.

*damaged*: *laesus* (part. A).

*damp*: *udus* (adj. A); cf. *MOIST*.

*dark*: deep shades of colour are usually indicated by adding the prefix *atro-* to the colour-name; *atroardesiacus*, dark slate-blue; *atrocyanus*, dark greenish-blue; *atropurpureus*, dark purple; *atrosanguineus*, dark blood-red; *atrovenetus*, dark bluish-green; *atrovinosus*, dark wine-colour, i.e. 'deep shades of the

moderately greyed series of purpureus and of ruber' (H. A. Dade); *atrovioletaceus*, dark violet; *atrovirens, atroviridis*, dark green; *fuscus*, strictly a sombre brown and often applied to a dark-skinned or sun-tanned person, is sometimes used to indicate darkness of other colours. The prefix *per-* indicates intensity of colour; *perviridis*, deep green. *darkened*: *fuscatus* (part. A), *darkening*: *atrans* (adj. B), *fuscan* (part. B).

*darkly*: in *Gk. comp.*, shaggy, thickly or markedly hairy; *dasyanthus*, with thickly hairy flowers; *dasychlamys*, with a shaggy covering; *dasycarpus*, with shaggy fruits; *dasyphyllus*, with markedly hairy leaves; *dasystemon*, with shaggy stamens; *dasystylus*, with shaggy styles; cf. *PSIL*.

*date-coloured*: *spadiceus* (adj. A).

*datu-* (part. A): given.

*dauciformis* (adj. A): carrot-shaped. *daucus* (adj. A): carrot-red (H.C.C. 6.12).

*Daughter*: *filia* (s.f. I). *Daughter-cell*: *cellula filialis*, abl. pl. *cellulis filialibus*.

*Day*: *dies* (s.m. V), abl. sing. *die*, nom. pl. *dies*, abl. pl. *diebus*; *in diem*, in the space of a day: *die et nocte*, by day and night. *belonging to day-time*: *diurnus* (adj. A).

*de* (prep. with abl.): concerning, with respect to, out of, from.

*dead*: *mortuus* (part. A), *emortuus* (part. A) used of organs; in *Gk. comp.*, *necro-*. See *DECEASED*.

*deadly*: *funestus* (adj. A); *lethalis* (adj. B).

*dealbatus* (part. A): covered with a white powder, *lit.* 'whitewashed'.

*debilis* (adj. B): weak.

*deca-*: in *Gk. comp.*, ten-; *decandrus*, 10-stamened; *decapetalus*, 10-petalled; *decaphyllus*, 10-leaved; see *DECEM-*, *TEN-*. *decalvatus* (part. A): made or become glabrous.

*Decas* (s.f. III. ii): decade, set of 10; cf. *DECURIA*.

*Decay*: *caries* (s.f. III).

*decayed*: *cariosus* (adj. A), *putrefactus* (part. A); cf. *ROTTEN*. *decaying*: *putrescens* (part. B).

*deceased*: *mortuus* (part. A), *defunctus* (part. A) (used of organisms), *beatus* (part. A) q.v. (used of a person named).

*decem* (num. adj. indecl.): ten. *decem-*: in *L. comp.*, ten-; *decemfidius*, 10-cleft; *decemjugus*, with 10 pairs of leaflets; see *DECA-*, *TEN-*.

*decidedly*: *perspicue* (adv.), *valde* (adv.). *deciduous*: *deciduus* (adj. A), *caducus* (adj. A). 342

*deciens* (adv.), *decies* (adv.): ten times, ten-fold.

*Decimetre* (s.n. II): decimetre. *decimus* (adj. A): tenth.

*decipiens* (part. B): deceiving (used of a species closely resembling another); cf. *FALLAX*.

*declinatus* (part. A): bent or curved downwards or forwards. 405, 412

*declivis* (adj. B): sloping downwards, steep; cf. *DEVELEXUS*.

*Decoction*: decoctum (s.n. II).

*decolor* (adj. B), *decoloratus* (part. A): deprived of its natural colour, discoloured, faded. *decolorans* (part. B): losing colour.

*decomposed*: see *ROTTEN*.

*decompound*: decompositus (adj. A). 204

*decorated*: ornatus (part. A).

*decorticans* (part. B): with bark peeling off. *decorticatus* (part. A): stripped of bark, with bark peeled off.

*decrescens* (part. B): growing less, diminishing, narrowing. *decrecente* (adv.): decreasingly.

*decumbens* (part. B): decumbent, prostrate with tip rising upwards. 424

*Decuria* (s.f. I): decade, set of ten; cf. *DECAS*.

*decurvate*: *decurvens* (part. B), *decurvus* (adj. A); *pileus lamellis longe decurrentibus*, pileus with gills running down the stipe. 439

*decurvatus* (part. A): *decurvus* (adj. A), *decurvatus* (adj. A).

*Decus* (s.n. III. iv): ornament, grace, splendour; *decus montium*, ornament of the mountains.

*decussatus* (adj. A): decussate, i.e. in pairs that alternately cross each other at right angles, thus making four rows; marked with lines intersecting cross-wise; derived from *decussis*, 'the number ten', hence 'the crosswise intersection of two lines like the Roman numeral X'. 493

*deep*: profundus (adj. A). *deeply*: penitus (adv.), profunde (adv.).

*deest* (3rd person sing. indic. pres. of *desum*): 'it is wanting'; cf. *ABSENCE*, *ADEST*, *DESUNT*, *E-*, *EX-*, *EXPERS*, *LACKING*, *PRESENT*, *WANTING*, *WITHOUT*.

*defective*: *defectivus* (adv. A), *imperfectus* (adj. A), *mancus* (adj. A).

*Defectus* (s.m. IV): failure, lack.

*deficiens* (part. B): wanting, lacking.

*definite* (adv.): precisely, definitely.

*Definition*: *definatio* (s.f. III. vi).

*definitus* (part. A): definite, of a fixed number less than 20; terminating in a flower; cf. *CERTUS*.

*deflexus* (part. A): deflected, bent or turned abruptly downwards; *per angulum 50° deflexus*, deflexed through an angle of 50°. 412

**defloratus** (part. A): with flowers withered or fallen.  
**Defoliatio** (s.f. III. vi): leaf-fall.  
**deformans** (part. B): deforming, disfiguring.  
**deformis** (adj. B): misshapen.  
**de fossus** (part. A): buried in the earth.  
**Dehiscence**: dehiscentia (s.f. I). **dehiscing**: dehiscens (part. B); cf. RUPTILIS, SEPTICIDALIS.  
**dein** (adv.), **deinde** (adv.): thereafter, thereupon, then.  
**dejectus** (part. A): low, fallen; *in ramis dejectis lectum*, on fallen branches collected; *ad ramos dejectos cortice denudatos*, on fallen branches stripped of bark.  
**delapsus** (part. A): fallen away.  
**Delectus** (s.m. IV): selection; *delectus seminum*, seed-list (*usu.* of botanic garden).  
**delicate**: subtilis (adj. B), tenuis (adj. B), tenellus (adj. A); delicatus (adj. A), rarely used, means 'addicted to pleasure, dainty, fastidious'.  
**Deliciae** (s.f. pl. I): pleasure, delight, pastime.  
**Delineatio** (s.f. III. vi): sketch, drawing.  
**delineatus** (part. A): drawn (*commonly abbreviated to del.*).  
**deliquescent** (part. B): deliquescent, becoming fluid when mature; repeatedly branching, *and thus metaphorically melting away*. 230  
**deltate, deltoid**: deltatus (adj. A), deltoideus (adj. A), triangularis (adj. B). 119, 130  
**demersus** (part. A): submerged, sunk in water. 392  
**de minimis** (part. B): diminishing.  
**de minimus** (part. A): diminished, small, diminutive, reduced.  
**de missus** (part. A): low, lowly, humble, drooping.  
**demonstrable**: demonstrabilis (adj. B).  
**demotus** (part. A): put aside, removed.  
**deprimitus** (part. A): taken away, subtracted.  
**demum** (adv.): at length, at last; *nunc demum*, now; *post demum*, afterwards, not until after.  
**dendr, dendro, -dendron** (s.n. II): *in Gk. comp.*, tree; *dendriticus*, *dendroideus*, *dendromorphus*, tree-like, resembling a tree in shape; *dendrophilus*, tree-loving. 238  
**Dendrologia** (s.f. I): study of trees. **dendrologicus** (adj. A): relating to the study of trees.  
**deni** (num.): ten each, ten at a time.  
**denigricans** (part. B): blackening, becoming black. **denigratus** (part. A): blackened.  
**denique** (adv.): at last, at length, finally.

**Dens** (s.m. III. ix): tooth, prong; *dens canis*, tooth of a dog; *dens leonis*, tooth of a lion.  
**dense**: *densus* (adj. A), *confertus* (part. A). *densely*: *dense* (adv.), *confertim* (adv.), *spisse* (adv.).  
**dentatus** (adj. A): toothed, usu. with sharp teeth pointing outwards. *denticulatus* (adj. A): denticulate, i.e. with very small teeth. *denti*: *in L. comp.*, tooth-; *dentiformis*, tooth-like. 183  
**denudatus** (part. A): denuded, stripped, having the leaves or hairs worn off. 298  
**denuo** (adv.): again, anew, once more.  
**deorsum** (adv.): downward, below (*opposite of SURSUM*).  
**depauperatus** (adj. A): undeveloped, reduced, depauperate, starved. 498  
**dependens** (part. B): suspended, hanging down. 394  
**depending**: *secundum* (prep. with acc.); *secundum aetatem*, depending on age, according to age.  
**depictus** (part. A): portrayed in colour.  
**deplanatus** (part. A): levelled off, made level.  
**Depressio** (s.f. III): a depression.  
**depressus** (part. A): flattened from above, somewhat sunken at the centre. 31, 338  
**Depth**: *altitudo* (s.f. III), *profunditas* (s.f. III); *in profunditate* 1-2 fathoms, at a depth of 1-2 fathoms.  
**depusus** (part. A): driven away, expelled, dislodged.  
**derasus** (part. A): smoothed off, shaved off; *area derasa*, scar area on seed of Sapotaceae.  
**derelictus** (part. A): abandoned, neglected.  
**derived from**: *oriundus* (adj. A).  
**Derma** (s.n. III. ix), *dermato*: *in Gk. comp.*, skin, e.g. *Argyroderma* 'silver skin', *Scleroderma* 'tough skin'.  
**Dermatocystidium**: *dermatocystidium* (s.n. II), *nom. pl.* *dermatocystidia*, *abl. pl.* *dermatocystidiis*; cf. CYSTIDIUM.  
**descending**: *descendens* (part. B); *also cernuus* (adj. A), *declinatus* (part. A), *deflexus* (part. A), *nutans* (part. B); cf. DIRECTION. 393  
**described**: *descriptus* (part. A). **Description**: *descriptio* (s.f. III. vi), *abl. sing.* **descriptione**, *nom. pl.* *descriptions*, *abl. pl.* *descriptionibus*: *descriptions et icones plantarum rariorum*, descriptions and illustrations of rare plants; *nomen absque descriptione*, name without a description.  
**Desert**: *desertum* (s.n. II), *gen. sing.* *deserti*, *abl. sing.* *deserto*, *nom. pl.* *deserta*, *gen. pl.* *desertorum*, *abl. pl.* *desertis*. **desert-**: *in L. comp.*, *deserti*, *in Gk. comp.*, *erem-*; *deserticola*, dweller in

**deserts**; *eremophilus*, desert-loving; *eremicus*, pertaining to deserts; cf. TESCA.  
**desiccatus** (part. A): dried up.  
**designated**: *designatus* (part. A).  
**desinens** (part. B): ending, stopping, ceasing.  
**-desma** (s.m. III. ix): *in Gk. comp.*, band.  
**-desma** (s.f. I): *in Gk. comp.*, bundle.  
**desquamatus** (part. A): scaled off, peeled, rubbed bare.  
**destitutus** (part. A): forsaken by, lacking, *used with abl.*; *thallus soredis et isidiis destitutus*, thallus lacking soredia and isidia.  
**destroying**: *destruens* (part. B), *consumens* (part. B).  
**destructus** (part. A): destroyed. **destruens** (part. B): destroying, ruining.  
**desumptus** (part. A): chosen, selected, picked out of a multitude.  
**desuēt** (3rd person pl. indic. pres. of *desum*): 'they are wanting'; cf. DEEST.  
**desuper** (adv.): from above, from overhead.  
**det.**: see DETERMINAVIT.  
**detached**: *separatus* (part. A).  
**detected** (part. A): revealed, discovered.  
**detergendus** (gerund. adj. A), *detergilis* (adj. B): easily wiped off or removed (as glaucous 'bloom' of fruits).  
**determinatus** (part. A): definite in outline, limited in number or extent.  
**determinavit** (3rd person sing. active perfect of *determino*): 'he has enclosed within boundaries', i.e. he has identified it, ascertained the systematic position and the name. This word, or its abbreviation *det.*, is commonly used in annotating herbarium specimens; *det. A. Gray*, identified by A. Gray.  
**detersus** (part. A): wiped clean, removed.  
**de trusus** (part. A): pushed down or into.  
**deutus** (part. A): burned up.  
**deuter-** (*in Gk. comp.*, second; *deuteronymus*, named a second time, an epithet comparable with *anabaptistus*) applied to a species for which the first name given cannot be used.  
**developed**: *evolutus* (part. A), *effectus* (part. A).  
**deve xus** (adj. A): sloping, steep; cf. DECLIVIS.  
**devoid**: *carens* (part. B with acc.); see DEEST, EXPERS, LACKING.  
**devoured**: *comesus* (part. A).  
**dexter** (adj. A): to the right, on the right-hand side; cf. SINISTER, DEXTROSUM (adv.): towards the right; cf. TWINING.  
**Dextrose**: *dextrosum* (s.n. II), *gen. sing.* *dextrosi*.  
**di-**: *in Gk. comp.*, two-; *diadelphus*, with stamens in two sets; *diandrus*, two-

stamened; *dichroanthus*, with two-coloured flowers; *dielinus*, with unisexual flowers, *lit.* 'in two beds'; *diginus*, with two styles or carpels; *dimerus*, with parts in twos; *dimorphophyllus*, with two kinds of leaves; *dimorphotrichus*, with two kinds of hairs; *di petalus*, two-petalled; *dipterocarpus*, with two-winged fruits; *dipyrenus*, with two pyrenes; *dispermus*, two-seeded; see BI, TWO.

**Diagnosis**: diagnosis (s.f. III); *diagnoses plantarum novarum Asiaticarum*, diagnoses of new Asiatic plants. **diagnostic**: diagnosticus (adj. A).  
**diagonally**: diagonaliter (adv.).  
**Diagram**: *diagramma* (s.n. III); *diagramma floris*, floral diagram.  
**dialy-**: *in Gk. comp.*, separated, disbanded; *dialypetalus*, with separate petals.  
**Diameter**: diameter (s.m. II), *acc. sing.* *diametrum*, *gen. sing.* *diametri*, *abl. sing.* *diametro*; *diametrum* (s.n. II), *acc. sing.* *diametrum*, *gen. sing.* *diametri*, *abl. sing.* *diametro*; 4 cm. *diametro*, 4 cm. in diameter; *segmenta aequa longa ac diametrum vel breviora*, segments as long as the diameter or shorter; *pilis longis diametrum caulis aequantibus*, with long hairs equalling the diameter of the stem; abbrev. *diam.*  

**diaphanus** (adj. A): colourless and nearly or quite transparent, diaphanous; cf. HYALINUS, PELLUCIDUS, TRANSPARENTE, VITREUS.

**Diaphragm**: *diaphragma* (s.n. III).  
**Diarium** (s.n. II): journal; cf. ACTA.  
**diarthrodactylus** (adj. A): (*in Charophyta*) having each ultimate ray two-celled.  
**dibrachiatus** (adj. A): two-branched (used of hairs); cf. MALPIGHIAEUS.  
**Dichasium**: *dichasium* (s.n. II), *acc. sing.* *dichasium*, *abl. sing.* *dichasio*.  
**dichotome** (adv.): dichotomously. **dichotomus** (adj. A): dichotomous, having divisions always in pairs. 231  
**dictus** (part. A): stated, declared, called; *loco dicto* 'Kadamak', at the place called 'Kadamak'.  
**didymus** (adj. A): didymous, in pairs, divided into two lobes, *in mycology* two-celled. 232  
**didynamus** (adj. A): didynamous, i.e. with two stamens long, two stamens short.  
**Dies** (s.m. V): day.  
**different**: dissimilis (adj. B), diversus (part. A); cf. ALIUS, ALTER.  
**Differential** (s.f. I): distinguishing feature; cf. CHARACTER.  
**differently**: aliter (adv.), alio modo (adv. phrase).  
**differing**: abhorrens (part. B), differens

(part. B), *discrepans* (part. B), *divergens* (part. B).

*differunt* (3rd person sing. pres. indic. active of *differo*, 'carry asunder, differ, be distinguished from'): 'it differs'; cf. Chapter XI.

*difficile* (adv.), *difficilliter* (adv.), *difficulter* (adv.): with difficulty.

*difficilis* (adj. B): difficult.

*diffiuens* (part. B): flowing in different directions, dissolving.

*difformis* (adj. B): irregularly or unevenly or differently formed, unlike what is usual.

*diffractus* (part. A): broken in pieces, shattered.

*diffusus* (part. A): diffuse, loosely, irregularly or widely spreading, with branches diverging from axis at an angle of 45°-90°. 425

*digestus* (part. A): set in order, arranged. *digitatus* (adj. A): digitate, e.g. with leaflets radiating from tip of leaf-stalk. 198

*digitiformis* (adj. B): finger-like.

*dilabens* (part. B): falling asunder, melting away, disappearing; *sepala post anthesis dilabentia*, sepals after anthesis falling away.

*Dilatatio* (s.f. III): swelling, expansion, widened part. *dilatatus* (part. A): broadened, expanded, widened.

*diligens* (part. B): careful, attentive, accurate. *diligenter* (adv.): carefully.

*dilute* (adv.): slightly, weakly. *dilutus* (part. A): diluted, thin, weak (mostly used of faint colours).

*Dimension*: *dimensio* (s.f. III. vi).

*dimidiatus* (part. A): dimidiate, with one part of an organ so much smaller than the other that only half of the whole organ seems present; divided through the middle; actually halved, with the outer wall of perithecium covering only the upper half. *Dimidium* (s.n. II): the half. *dimidio* (adv.): by half. *dimidius* (adj. A): half. 63, 138

*diminishing*: *diminuens* (part. B), *minuens* (part. B), *imminuens* (part. B), *decrecens* (part. B).

*diminutus* (part. A): made small, diminished.

*dimissus* (part. A): discharged, sent forth, let go.

*dimorphus* (adj. A): having two forms, e.g. short- or long-styled.

*dingy*: *sordidus* (adj. A).

*Dio*: see *DIV*.

*diocious, dioicous*: *diocicus* (adj. A); *in bryology usu. dioicus* (adj. A).

*diplocolobeus* (adj. A): with incurved cotyledons twice folded transversely, as in *Heliophila*.

*diplo-*: in *Gk. comp.*, double; *diploceras*, with two horns; *diplocylus*, with two whorls; *diploscyphus*, with a double cup; *diplostemonus*, diplostemonous, i.e. having stamens twice as many as the petals, the stamens of the outer whorl opposite the sepals, the stamens of inner whorl opposite the petals; *diplostephanus*, having a double circle of stipules at the base of each whorl of branchlets; *diplostichus*, in two rows, in *Charophyta* having two rows of cells to each branchlet.

*diploid*: *diploideus* (adj. A); cf. *CHROMOSOME*, *-PLOIDEUS*.

*Direction*: *cursus* (s.m. IV), *abl. sing.* *cursu* 'line of motion, course'; *directio* (s.f. III), *abl. sing.* *direccione* 'a making straight, aiming'. The poise of an organ when directed upwards may be indicated by *erectus*, *arrectus* (erect), *ascendens*, *assurgens* (ascending), when directed outwards by *horizontalis*, *patens* (spreading), when directed downwards by *descendens*, *nutans* (nodding), *cernuus* (nodding), *deflexus*, *declinatus*, *reclinatus* (bent downwards), when hanging down by *dependens*, *pendulus*, when having a gradually inward direction by *connivens*, when flat on the ground by *humifusus*, *procumbens*, *pronus*, *prostratus*, *decumbens*. The part. *spectans* (looking at, facing, situated towards), is sometimes used with adverbs *deorsum* (downwards), *sursum*, *sursus* (upwards), *extrorsus* (outwards); the adv. *versus* or *versum* (turned in the direction of) usu. follows the name of part (in acc.) to which direction is indicated; *apicem versus*, towards the tip, *deorsum versus*, downwards; *quoquaversus*, in every direction; *spinae a se exadverso flexae*, spines turned in opposite directions from each other. Cf. *OVULE*, *VEINING*.

*directus* (part. A): straight, going direct (whether horizontally or vertically).

*disagreeing*: *discrepans* (with in, abl. or dat.) *disappearing*: *evanescens* (part. B); cf. *DELIQUESCENS*, *DILABENS*, *FATISCENS*.

*Disc*: *discus* (s.m. II), *gen. sing.* *disci*, *abl. sing.* *disco* (generally used), *torus* (s.m. II), *gen. sing.* *tori*, *abl. sing.* *toro* (used only of receptacle); *thallus e disco basali et filis erectis constructus*, thallus from a basal disc and erect filaments constructed; *discus basalis paucistratus e filamentis repentibus cohaerentibus compitus*, basal disc several-layered from creeping cohering filaments composed; *capitula heterogama*, *floribus radii uniseriatis fertilibus*, *disci sterilibus*, heads

heterogamous with flowers of the circumference in one series fertile, of the disc sterile; *achenia disci bialata*, achenes of the disc two-winged. *disc-like*: disciformis (adj. B), *discoideus* (adj. A), *discoidalis* (adj. B).

*discedens* (part. B): separating, dividing, contrasting.

*discernible*: *distinguibilis* (adj. B).

*discharged*: *dimissus* (part. A), *emissus* (part. A), *discharging*: *emittens* (part. B).

*disciformis* (adj. B): disc-like. Used also of *Compositae* when in a capitulum having central and marginal florets distinct the outer female florets do not rise above the disc. *discoideus* (adj. A): discoid, with a rounded blade and thickened margin. Used also of *Compositae* with all the florets regular and alike. *discoidalis* (adj. B): orbicular. 34

*discolor* (adj. B): of another colour, not of the same colour (as when two faces of a leaf are unlike in colour), variegated.

*discovered*: *inventus* (part. A). *discrepans* (part. B): differing. *discretus* (part. A): separated, set apart, loose.

*Discrimen* (s.n. III. vi): that which separates two things from each other, distinction, difference.

*Disease*: *morbus* (s.m. II); cf. -osis.

*diseased*: *aeger* (adj. A), *aegrotus* (adj. A), *morbidus* (adj. A), *morbosus* (adj. A); cf. *INFECTUS*, *LANGUESCENS*, *TABESCENTS*.

*dish-shaped*: *patelliformis* (adj. B).

*disintegrating*: *fatiscens* (part. B).

*disjuncte*, *disjunctum* (adv.): separately. *disjunctus* (part. A): separate, distinct.

*Disk*: see *DISC*.

*dislodged*: *depulsus* (part. A).

*disorderly*: *inordinate* (adv.), *inordinatum* (adv.).

*dispansus* (adj. A): opened out widely, with gaping cracks.

*dispar* (adj. B): unlike, unequal.

*disparatus* (part. A): separated.

*disperse* (adv.), *dispersim* (adv.): dispersedly, here and there. *Disperso* (s.f. III): dispersion, scattering. *dispersus* (part. A): scattered.

*dispersing*: *spargens* (part. B).

*displaying*: *ostendens* (part. B), *praebens* (part. B).

*displacitus* (part. A): scattered.

*Dispositio* (s.f. III. vi): regular arrangement. *dispositus* (part. A): arranged, disposed, placed here and there, spaced.

*disrumpens* (part. B): breaking off, bursting asunder. *disruptus* (part. A): broken off.

*dissectus* (part. A): dissected, deeply divided or cut into numerous segments.

*Dissepimentum* (s.n. II): dissepiment, partition, dividing wall.

*Dissertatio* (s.f. III. vi): discourse, dissertation (originally a spoken one), thesis. *dissilens* (part. B): bursting elastically, springing apart.

*dis similis* (adj. B): unlike, dissimilar (generally referring to variation in the form of a given organ on the same plant). *dissiti-*: in *L. comp.*, remote, apart; *dissitiflorus*, with well-spaced flowers. *dissitus* (adj. A): lying apart, remote, well-spaced.

*dissocians* (part. B): dissociating; cf. *DISCEDENS*.

*dissolutus* (part. A): dissolved.

*dissolving*: *diffuens* (part. B), *dissolvens* (part. B).

*distalis* (adj. B): distal, remote from place of attachment.

*distance*: *distantia* (s.f. I), *abl.* *distantia*, *spatium* (s.n. II), *abl.* *spatio*.

*distant*: *distans* (part. B), 'standing apart'; *semitus* (part. A) 'far removed'; cf. *DISSITUS, REMOTUS*. 499

*distended* (part. A): distended; cf. *TURGIDUS*.

*distichus* (adj. A): distichous, arranged in two opposite rows. 488

*distinct*: *distinctus* (part. A) 'separated', *proprius* (adj. A) 'on its own'; *species propria*, a distinct species. 451

*distinguibilis* (adj. B): discernible, distinguishable; cf. *EVIDENT*.

*Ditch*: *fossa* (s.f. I), *gen. sing.* *fossae*; *scrobus* (s.m. III), *gen. sing.* *scrobus*.

*Ditio* (s.f. III. vi): authority, administrative district.

*distributed*: *distributus* (part. A). *Distribution*: *distributio* (s.f. III); *distributio geographica*, geographical distribution.

*District*: *regio* (s.f. III); *ager* (s.m. II).

*disturbed*: *turbatus* (part. A).

*diu* (adv.): a long time, long (in sense of time). *diuscule* (adv.): a little while.

*diutinus* (adj. A). *diuturnus* (adj. A): long-lasting, of long duration. *diutius* (adv.): very long, longer (both in sense of time). *diutile* (adv.): a little while.

*diurnus* (adj. A): belonging to the day; cf. *DAY, NOCTURNUS, VESPERTINUS*.

*divaricatus* (part. A): divaricate, spreading asunder at a wide angle; see *VEINING*. 426

*divergens* (part. B): diverging, going different ways.

*diverse* (adv.); in different directions, differently, diversely; cf. *VARIE*.

*diversi-*: in *L. comp.*, diverse, various; *diversicolor*, *diversicolor*, of various colours; *diversiflorus*, with flowers of different kinds; *diversifolius*, with leaves

of different shapes on the same individual; *diversiformis*, of varying form. *diversus* (part. A): turned different ways, diverse, contrary, opposite, different, distinct.

*dives* (adj. B): rich, plentiful; *arbor succo viscidu lacteo dives*, tree rich in viscous milky juice.

*divided*: *divisus* (part. A). *dividing*: *dividens* (part. B), *discedens* (part. B).

*Division*: *divisio* (s.f. III. vi) 'act of dividing, part divided off', *divisura* (s.f. I) 'place of division, fork, incision', *parts* (s.f. III. ix) (part), *caput* (s.n. III. ii) (heading, chapter); *cellulae ante divisionem*, *divisionem*, *post divisionem ovoidae*, cells before division, at division, after division ovoid.

*divulgatus* (part. A): widespread, q.v.

*divulsus* (part. A): torn asunder, separated, removed.

*Divum* (s.n. II): the sky; *sub divo*, *sub dio*, in the open air.

*Docks*: *navalia* (s.n. II, pl.).

*doctus* (part. A): learned, skilled.

*dodeca-*: in *Gk. comp.*, twelve-; *dodecandrus*, 12-stamened.

*Dodrans* (s.m. III. ix): three-quarters, distance between tips of thumb and little finger when extended, 9 inches, approx. 24 cm. *dodrantalis* (adj. B): 9 inches long.

*dolabriformis* (adj. B): dolabriform, i.e. in shape somewhat resembling an axe. 37

*dolich-*, *dolicho-*: in *Gk. comp.*, long-; *dolichanthus*, long-flowered; *dolichobryts*, with a long raceme; *dolichocalyx*, with a long calyx; *dolichocentrus*, *dolichoceras*, long-spurred; *dolichopetalus*, long-petalled; *dolichophyllus*, long-leaved; *dolichopodus*, long-stalked; see *BRACHY-*, *LONG-*.

*doliformis* (adj. B): barrel-shaped; cf. *CUPIFORMIS*.

*Domatium*; *domatium* (s.n. II), *nom. pl.* *domatia*, *abl. pl.* *domatis*; see *ACARODOMATIUM*.

*Dome*: *tholus* (s.m. II). *dome-shaped*: *tholiformis* (adj. B).

*Domina* (s.f. I): mistress, Mrs. *Dominilla* (s.f. I); Miss. *Dominus* (s.m. II): master, Mr.

*dominans* (part. B): dominating, dominant.

*donans* (part. B): giving. *donatus* (part. A): given.

*donec* (conj.): while, until.

*dormiens* (part. B): sleeping, resting; *geminae dormientes*, resting buds.

*dorsal*: *dorsalis* (adj. B), *dorsualis* (adj. B). *dorsally*: *dorsaliter* (adv.). *dorsifixation*: *dorsifixus* (adj. A). 456

*Dorsum* (s.n. II): back, lower or outer side of an organ.

*Dot*: *punctum* (s.n. II), *abl. pl.* *punctis*; *petala flava punctis nigris basim versus notata*, petals yellow with black dots towards the base marked. *dot-like*: *punctiformis* (adj. B). *dotted*: *punctatus* (adj. A). 258

*Dotting*: *punctatio* (s.f. III. vi), *abl. sing.* *punctatione*; *valvae sine punctatione distincta*, valves without distinct dotting.

*double*: *duplex* (adj. A). In florist's sense of having much more than the usual number of petals, *duplex*, *flore pleno*, *pleniflorus*, *plenus* (full), *trigintipetalus* (thirty-petalled), *centifolius* (hundred-leaved) have been used. *doubly*: *duplo* (adv.). *doubly-*: in *L. comp.*, *duplicato*, *in Gk. comp.*, *diplo-*; *folia duplicato-serrata*, leaves doubly serrate. *doubled*: *geminatus* (part. A), *duplicatus* (part. A). 503

*Doubt*: *dubitatio* (s.f. III. vi). *doubtful*: *dubius* (adj. A). *doubtfully*: *dubie* (adv.). *without doubt*: *sine dubio*, *sine ulla dubitatione*.

*downward*: *deorsum* (adv.); *folia pilis deorsum curvatis*, leaves with hairs downwards curved.

*downy*: *pubescens* (part. B), *pubens* (adj. B). 271

*-doxa* (s.f. I), *-douxus* (adj. A): in *Gk. comp.*, glory, splendour, good repute, e.g. *adoxus* 'without glory', *eudoxus* 'of good repute', *chionodoxa* 'glory of the snow', *helodoxa* 'glory of the marsh'.

*dragging*: *trahens* (part. B).

*Drawing*: *delineatio* (s.f. III. vi). *drawn*: *delineatus* (part. A).

*drawn out*: *extensus* (part. A), *extractus* (part. A), *productus* (part. A).

*dredged*: *subductus* (part. A), *prolatus* (part. A).

*drepan-*: in *Gk. comp.*, curved like a sickle, sickle-; *drepanophyllus*, with sickle-shaped leaves; see *FALCATE*.

*Drepanium*: *drepanium* (s.n. II), *acc. sing.* *drepanium*, *abl. sing.* *drepano*.

*dried*: *exsiccatus* (part. A), *siccatus* (part. A); *desiccatus* (part. A), *arefactus* (part. A); *exsiccatum*, *specimen exsiccatum*, dried specimen; *exsiccata*, *flora exsiccata*, set of dried specimens.

*drooping*: *cernuus* (adj. A), *demissus* (part. A). 407

*Drop*: *gutta* (s.f. I). *Droplet*: *guttula* (s.f. I).

*drum-shaped*: *tympaniformis* (adj. B).

*drupaceus* (adj. A): drupe-like. *Drupe*: *drupa* (s.f. I), *abl. sing.* *drupa*, *nom. pl.* *drupae*, *abl. pl.* *drupis*, *lit.* 'an over-ripe wrinkled olive'. *Drupelet*: *drupella* (s.f. I); cf. *FRUCTICULUS*.

*dry*: *siccus* (adj. A), *aridus* (adj. A); *hortus siccus*, *herbarium*; *caules in sicco nigrescentes*, stems in a dried state blackish; *folia siccitate membranaceae*, leaves by drying membranous; *habitat in aridis*, it dwells in dry places.

*Dubitatio* (s.f. III. vi): doubt; *sine ulla dubitatione*, without any doubt; *sine dubio*, without doubt, indisputably. *dubie* (adv.): doubtfully. *dubius* (adv. A): doubtful.

*Ducatus* (s.m. IV): duchy.

*dulcis* (adj. B): sweet, pleasant; cf. *AMARUS*.

*dull*: *hebes* (adj. B), *acc. sing.* *hebetem*, *gen. sing.* *hebetis*, *abl. sing.* *hebeti*; cf. *MATT.* *duli*: obscure (adv.).

*dull-coloured*: *tristis* (adj. B) 'sad', *obscurus* (adj. A) 'dusky', *sordidus* (adj. A) 'dingy'.

*dum* (conj.): while, whilst, now.

*Dumetum* (s.n. II): thorn-scrub, thicket.

*Dumicola* (s.m. I): dweller in thickets. *dumosus* (adj. A): full of thorn-bushes, of bushy habit or aspect. *Dumus* (s.m. II): thorn-bush.

*dumtaxat* (adv.): exactly, only, not more, not less.

*Dune*: *thinium* (s.n. II), *abl. pl.* *thiniis*.

*Dung*: *stercus* (s.n. III), *acc. sing.* *stercorem*, *gen. sing.* *stercoris*, *abl. sing.* *stercore*; *stimus* (s.m. II), *acc. sing.* *stimum*, *gen. sing.* *fimi*, *abl. sing.* *fimo*;

*ad finum equinum*, on horse-droppings; *in stercore vaccino*, in cow-dung. *dung-loving* (growing on dung): *coprophilus* (adj. A), *fimicola* (s.f. I), pertaining to dung: *stercorarius* (adj. A); in *Gk. comp.*, *apopato*, *copro-*, *ontho-*, *scato-*, *scybalo-*, in *L. comp.*, *fimir*, *sterc-*, *stero-*, *stinking like dung*: *stercoreus* (adj. A).

*duo* (adj. num.): two, q.v.

*duodecies* (adv.), *duodecies* (adv.): twelve times. *duodecim* (num. adj. indecl.): twelve. *duodecimus* (adj. A): twelfth.

*duplex* (adj. B): double, q.v.

*duplicato* (adv.): twice as much. *duplicato-crenatus* (adj. A): doubly crenate, each tooth itself toothed. *duplicato-pinnatus* (adj. A): bipinnate. *duplicato-serratus* (adj. A): doubly serrate.

*duplicatus* (part. A): doubled, paired. 221, 503

*duplo* (adv.): doubly.

*Duration*: *duratio* (s.f. III. vi), *abl. sing.* *duratione*. *during*: per (prep. with acc.), *tempore* (*abl. sing.*, s.n. III), (with gen.) (at the time of); *tempore conjunctionis sexualis*, during sexual union.

*Duritia* (s.f. I): hardness.

*duriusculus* (adj. A): somewhat hard.

*durus* (adj. A): hard.

*dusky*: *furvus* (adj. A).

*dwarf*: *nanus* (adj. A), *pumilus* (adj. A). 335

*Dyer*: *tinctor* (s.m. III), q.v.

*dying off*: *emoriens* (part. B).

*dysentericus* (adj. A): reputed to cause dysentery.

## E

*e* (prep. with *abl.*): from, out of; see EX.

*e* (L. prefix): in *L. comp.*, without, lacking, destitute of, un-, -less; see EX, A-;

*ebanteatus*, without bracts; *ecalcaratus*, spurless; *ecallosus*, lacking callousness; *ecarinatus*, not keeled; *eciliatus*, without cilia; *ecorticatus*, without bark or bark-like covering; *ecristatus*, not crested; *efoliatus*, without leaf-like scales; *eglandulosus*, eglandular, destitute of glands, glandless; *enervis*, *enotatus*, with no ribs or veins apparent; *epenatus*, without markings; *epapillous*, not papillose; *epetiolarius*, *epetiolatus*, without petiole; *epunctatus*, without dots; *erostris*, beakless; *estipitatus*, not stalked; *estipulatus*, without stipules; *e* is never used before a vowel, *h*, *t* and *g*, rarely before *p* and *s*.

*each*: can be expressed in several ways according to meaning; *inter se*, between each other, to each other; *in quoque segmento*, on each segment; *venae sibi parallelae*, veins parallel to each other.

*each (of two)*: *uterque* (pron. m.), *utraque* (f.), *utrumque* (n.). *each single one* (of a number of objects): *unusquisque* (compar. pron. m.), *unaquaeque* (f.), *unumquidque* (n.). *each and every*: *omnis* (adj. B).

*-eae* (adj.): nom. f. pl. suffix added to stem of name or synonym of type genus used to form name of tribe, e.g. *Datureae*

*Ear*: (of cereal) *spica* (s.f. I), (of leaf-base) *auricula* (s.f. I). *eared*: *spicatus* (adj. A), q.v.; *auriculatus* (adj. A), q.v.

*early*: mature (adv.), *praecox* (adj. B).

*Earth*: see SOIL.

*easy*: *facile* (adv.), *easy*: *facilis* (adj. B).

*East*: *oriens* (s.m. III. ix), *gen. sing.* *orientis*; *ad orientem*, to the east.

*east*, *eastern*: *orientalis* (adj. B).

*eaten up*: *exesus* (part. A).

*Ebb*: *recessus* (s.m. IV), *refluxus* (s.m. IV); cf. TIDE.

*ebbing*: *minuens* (part. B); *minuente aestu*, at the ebbing of the tide.

*ebeneus* (adj. A): ebony black.

*eburneus* (adj. A): ivory white, i.e. white with yellow tinge.

*-ebus*: *abl.* and *dat.* pl. ending of s. V., meaning mostly 'with' but also 'from, by, in' (when *abl.*) and 'to, for' (when *dat.*).

ecarinatus (adj. A): without keel, keelless. eccentricus (adj. A): *see EXCENTRICUS*.  
 echinatus (adj. A): echinate, armed with numerous rigid hairs or straight prickles or spines, from *echinus* (s.m. II), 'hedgehog, sea-urchin', hence 'prickly husk of sweet chestnut'. *echinulatus* (adj. A): with very small prickles, echinulate. 263  
*ecorticatus* (adj. A): without bark.  
*edens* (part. B): giving out, putting forth; *radix caules edens*, root putting forth stems.  
*edentatus* (adj. A): untoothed, toothless.  
*Edge*: *see MARGIN*.  
*edible*: *edibilis* (adj. B), *edulis* (adj. B), *esculentus* (adj. A).  
*Editio* (s.f. III. vi): edition; *editio altera*, second edition, *editus* (part. A): (*relating to books, etc.*) published, (*relating to places*) high, lofty.  
*edulis* (adj. B): eatable; *see EDIBLE*.  
*eel-like*: *anguilliformis* (adj. B), q.v.  
*Eelworm*: *vermiculus* (s.m. II) *nematoideus* (adj. A), *nematodum* (s.n. II).  
*effaced*: obliteratus (part. A).  
*effectus* (part. A): completed, accomplished, developed.  
*effervens* (part. B): bringing forth, producing.  
*efficiens* (part. B): effecting, presenting, making, causing.  
*effiguratus* (adj. A): effigurate, having a definite form or figure.  
*Efflorescentia* (s.f. I): the period of opening of the flower; *cf. ANTHESIS*.  
*effoetus* (adj. A): worn out by bringing forth young, exhausted.  
*effractus* (part. A): broken off.  
*effusus* (part. A): spread out, indeterminate, straggling, wide (*referring to habit of growth*), *lit.* 'poured out'.  
*egg-yolk yellow*: *vitellinus* (adj. A).  
*eglandulatus* (adj. A): *eglandulosus* (adj. A): eglandular, non-glandular, glandless.  
*egrediens* (part. B): coming forth, passing out of.  
*egregie* (adv.): excellently. *egregius* (adj. A): excellent.  
*eight*: *octo* (num. adj. indecl.) 'eight', *octavus* (adj. A) 'eighth', *octies* (adv.), *octiens* (adv.) 'eight times', *octanus* (adj. A) 'eight at a time'.  
*eight-*: *in L. and Gk. comp.*, *octo-*; *octo-petalus*, 8-petalled; *see OCTO*.  
*either*: *alteruter* (adj. A); *cf. BOTH, EACH, TERTERUE*.  
*ejected*: *ejectus* (part. A), *expulsus* (part. A).  
*ejusdem*: of the same; *see IDEM*.  
*elabens* (part. B): escaping, slipping away.  
*elasticus* (adj. A): elastic, returning to its original position when pressed or bent.

*Elater*: *elater* (s.m. III. v), *gen. sing. elateris*, *abl. sing. elatere*, *nom. pl. elateres*, *gen. pl. elaterum*, *abl. pl. elateribus*; *elateres in omnibus fere spiri rare monospiri vel 3-4-spiri decidui, perpauci heteromorphi interdum in capsulae fundo apiceve diutius persistentes, demum idem ac normales decidui*, elaters in nearly all with two spiral fibres rarely with a single spiral or with 3 or 4 spirals deciduous, a few abnormal heteromorphic ones sometimes persisting longer at the base or the apex of capsule, at last deciduous the same as the normal ones; *elateres valde numerosi, tota facie capsulae interna primum insidentes, capsula dehiscente omnes decidui, angusti utroque fine tenuiores tortiles*, elaters very numerous, the whole inner surface of the capsule at first occupying, with the capsule bursting all falling out, slender at each end narrower twisted; *elateres nulli*, elaters none; *elateres vel monospiri vel fibram solam flexuosam (nec spiralem) continentes*, elaters either with one spiral or containing a single flexuous (not spiral) fibre; *elaterum fibra perfecte spiralis*, of the elaters the fibre perfectly spiral.  
*elatus* (part. A): tall, q.v. 340  
*electron*: *electronicus* (adj. A); *flagellum per microscopum electronicum visum*, flagellum seen by means of the electron microscope.  
*elegans* (adj. B): elegant. *eleganter* (adv.): elegantly.  
*elevated*: *elevatus* (part. A).  
*eleven*: *undecim* (num. adj. indecl.) 'eleven', *undecimus* (adj. A) 'eleventh', *undecies* (adv.) *undeciens* (adv.) 'eleven times'. *eleven-*: *in Gk. comp.*, *hendeca-*, less correctly *endeca-*; *endecaphyllus*, *hendecaphyllus*, with 11 leaves or leaflets.  
*Ell*: *cubitus* (s.m. II), *nom. pl. cubiti*.  
*ellipsoid*: *ellipsoideus* (adj. A), *ellipsoidalis* (adj. B). 24  
*elliptic, elliptical*: *ellipticus* (adj. A). very narrowly elliptic: *peranguste ellipticus*. narrowly elliptic: *anguste ellipticus*. broadly elliptic: *late ellipticus*. 108  
*-ellus* (adj. A, suffix): used to form diminutives; in colour-names indicates a pale tint.  
*elongated*: *elongatus* (adj. A), *productus* (part. A), *prolatus* (part. A).  
*elsewhere*: *alibi* (adv.).  
*emarginatus* (part. A): emarginate, shallowly notched (*usu. at tip*), (in Fungi) with a sudden curve or notch at point of attachment to stipe. 156  
*embedded*: *see IMBEDDED*.

*embracing*: *amplectens* (part. B). 440  
*Embryo*: *embryo* (s.m. III. vi), *gen. sing. embryonis*, *abl. sing. embryone*. The form *embryum*, to be expected from Gk. *ἐμβρύον* (s.n.), has been rarely if ever used; *embryo magnus arcuatus, cotyledonibus planis, plumula inconspicua, radicula brevi*, embryo large curved like a bow, with cotyledons flat, plumule inconspicuous, radicle short; *embryo in albumine carnoso periphericus linearis curvus vel spiraliter tortus (haud rectus) indivisus, cotyledonibus inconspicuis*, embryo within fleshy endosperm peripheral linear curved or spirally twisted (not straight), with cotyledons inconspicuous; *embryo nunc rectus, cotyledonibus latissimis foliaceis conduplicate albumen longitudinaliter involvens radicula brevi infera, nunc incurvus, cotyledonibus incumbentiibus convolutis albumen involventibus, vel cotyledonibus angustis albumini applicatis, radicula elongata extraria infera*, embryo straight, with the cotyledons broad leafy conduplicate the albumen lengthwise enveloping (i.e. the embryo covering the albumen with its cotyledons), or with the cotyledons narrow applied to the albumen, with the radicle elongated external lower; *embryonis exalbuminosi cotyledones circinatum convolatae*, of the exalbuminous embryo the cotyledons coiled from the tip; *species structura embryonis plane diversa*, species by the structure of the embryo clearly different; *species habitu praecedentis sed embryone diversa*, species with the habit of the preceding but by the embryo different. *embryonalis* (adj. B): pertaining to the embryo. *embryonatus* (adj. A): provided with an embryo.  
*Embryotega*: *embryotega* (s.f. I), *abl. sing. embryotega*.  
*Emendatio* (s.f. III. vi): correction, amendment. *emendatus* (part. A): freed of faults, corrected.  
*emerald-green*: *smaragdinus* (adj. A).  
*emergens* (part. B): emerging, half-uncovered.  
*emeritus* (part. A): 'that has become unfit for service, worn out, burned out, extinguished' (Lewis & Short); applied by Ovid to horses, by modern universities to retired professors.  
*emersus* (part. A): raised up, brought forth, standing above.  
*eminens* (part. B): standing out, projecting. *Eminentia* (s.f. I): projection, protuberance.  
*emissus* (part. A): sent forth, released, discharged.  
*emittens* (part. B): emitting, giving forth, releasing; *zoosporangia 4 zoosporas emitantia*, zoosporangia emitting 4 zoospores.  
*emortiens* (part. B): dying off.  
*emortuus* (part. A): dead, perished.  
*empty*: *cassus* (adj. A), *inanis* (adj. B), *vacuus* (adj. A), *in some contexts*, *nudus* (adj. A), 'naked'. *cavus* (adj. A) 'hollow', *evacuatus* (part. A) 'emptied out'.  
*emulsivus* (adj. A): milk-like in texture.  
*enantio-*: *in Gk. comp.*, opposite.  
*enatus* (part. A): issuing from, arising from.  
*encircled*: *cinctus* (part. A), *circumdatus* (part. A). *encircling*: *cingens* (part. B), *circumdatus* (part. B).  
*enclosed*: *inclusus* (part. A). *enclosing*: *includens* (part. B).  
*encrusted*: *incrustatus* (part. A).  
*encysted*: *incystatus* (adj. A).  
*End*: *extremum* (s.n. II), *abl. sing. extrema*, *nom. pl. extrema*, *abl. pl. extremitas*; *extremitas* (s.f. III. ii), *abl. sing. extremitate*, *abl. pl. extremitatibus*; *finis* (s.f. III), *abl. sing. fine*, *abl. pl. finibus*; *folia in extremitatibus ramorum tantum*, leaves at the ends of the branches only.  
*end-, endo-*: *in Gk. comp.*, within, inside.  
*endeca-*: *in Gk. comp.*, eleven.  
*ended*: *terminatus* (part. A, used with *abl.*).  
*endemic*: *endemicus* (adj. A).  
*Endoxine*: *endoxinium* (s.n. II).  
*ending in*: *desinens* (part. B, used with *in* and acc.), *terminans* (part. B, used with *in* and acc.).  
*endo-*: *in Gk. comp.*, within, inside.  
*endogenus* (adj. A): endogenous, arising from deep-seated tissue, growing immersed for the most part in the substratum (*as certain lichens*), produced within another body.  
*endolithicus* (adj. A): *endolithic*, growing immersed in stone.  
*Endoperidium*: *endoperidium* (s.n. II).  
*endophloeodes* (adj. Gk.), *endophloedius* (adj. A): *endophloedal*, i.e. inhabiting the cork layer of tree bark and immersed in it: *thallus endophloeodes*, thallus endophloedal.  
*endophyticus* (adj. A): *endophytic*, growing within plant tissue.  
*Endosperm*: *endospermium* (s.n. II), *abl. sing. endospermio*.  
*Endospore*: *endosporium* (s.n. II), *abl. sing. endosporio*.  
*Endothecium*: *endothecium* (s.n. II), *abl. sing. endothecio*.  
*endozooicus* (adj. A): living inside an animal. *endozoophyticus* (adj. A): growing in or among zoophytes.  
*enecans* (part. B): killing completely.

enervis (adj. B), enervius (adj. A): without nerves; cf. NERVOSUS. 361  
 engraved: sculptus (part. A), insculptus (part. A), sculpturatus (adj. A).  
 enim (conj.): truly, certainly, for.  
 enlarged: amplificatus (part. A) 'made wider', auctus (part. A) 'increased by growth', dilatatus (part. A) 'spread out', accrescens (part. B) 'enlarging by growth with age'; cf. ACCRESCENT.  
 Enlargement: amplificatio (s.f. III).  
 ennea-: in Gk. comp., nine-; enneandrus, 9-stamened; enneaphyllus, with 9 leaves or leaflets; enneaspermus, 9-seeded; see NINE-.  
 endos (adj. B): without nodes; cf. NODOSUS.  
 ensatus (adj. A), ensiformis (adj. B): sword-like, 'shaped like a two-edged sword, gradually tapering to the point' (Berkenhout); cf. GLADIATUS. ensifer (adj. A): sword-bearing. ensifolius (adj. A): sword-leaved. 116  
 -ensis (adj. B): adjectival suffix indicating origin or place, e.g. hortensis relating to gardens, kewensis, relating to Kew.  
 ensnaring: illaquaens (part. B).  
 entangled: intricatus (part. A), implicatus (part. A), contortuplicatus (adj. A). 502  
 entering: ingrediens (part. B), intrens (part. B).  
 entire: integer (adj. A): *labello integro*, with labellum entire; *folia integra viridia*, leaves entire green; *folii integris viridibus*, with leaves entire green; *bractea integra*, bract entire; *scapus bractea integra*, scape with bract entire; *bracteae integrae virides*, bracts entire green; *pedicelli bracteas membranaceas virides integras duplo superantes*, pedicels twice as long as the membranous green entire bracts; *bracteis integris*, with entire bracts: entirely: omnino (adv.); sometimes expressed by the use of adj. in the superlative. 179  
 enumerated: enumeratus (part. A), noncupatus (part. A). Enumeration: enumeratio (s.f. III. vi), recensio (s.f. III. vi).  
 Envelope: involucrum (s.n. II). enveloped: involutus (part. A), enveloping: involvens (part. B); see EMBRYO.  
 ephemeral: ephemerus (adj. A), fugax (adj. B).  
 ephippioideus (adj. A), ephippiomorphus (adj. A): saddle-shaped.  
 epi-: in Gk. comp., upon, over, on top of, added to; *epidendrus*, on trees; *epigeios*, on the earth; *epiphydrus*, on the water, i.e. floating; *episiphus*, bare above; *epitrichus*, hairy above.  
 Epicalyx: epicalyx (s.m. III. i), gen. sing. epicalycis, abl. sing. epicalyce; see CALYX.  
 Epicarp: epicarpium (s.n. II).

epicorollinus (adj. A): inserted on the corolla.  
 Epicotyl: internodium (s.n. II) epicotylum (adj. A), epicotylus (s.m. II).  
 Epicutis: epicutis (s.f. III. vii), gen. sing. epicutis, abl. sing. epicute.  
 epidermal: epidermalis (adj. B), epidermicus (adj. A).  
 Epidermis: epidermis (s.f. III. ii), gen. sing. epidermidis, abl. sing. epidermide.  
 epidermoideus (adj. A): epidermis-like.  
 epigaeus (adj. A): epigeal, growing upon the ground or rising a little above it. 469  
 epigenus (adj. A): epigenous, growing on the surface.  
 epigynicus (adj. A), epigynus (adj. A): epigynous, situated on the upper part of the ovary or above the oogonium. 472  
 epilithicus (adj. A): epilithic, growing on the surface of stone, roof-tiles, etc.  
 epiphloeodes (adj. Gk.), epiphloeoedius (adj. A): growing on the surface of bark or wood; cf. ENDOPHLOEODES.  
 Epiphragm: epiphragma (s.n. III. xi), abl. sing. epiphragmate; tympanum (s.n. II), abl. sing. tympano.  
 epiphyllus (adj. A): epiphyllous, growing on leaves or leaf-like organs or, in mycology, the upper surface of leaves; in epiphylo, on the upper leaf-surface.  
 epiphyticus (adj. A): epiphytic, growing on other plants but not parasitic.  
 Episporo: episporium (s.n. II), abl. sing. episporio; episporio laevi vel granulosi aspero, hyalino vel fuscenscente, with episporo smooth or granular and rough, hyaline or becoming brownish. episporiatus (adj. A): provided with an episporo.  
 Epithallus: epithallus (s.m. II), abl. sing. epithallo.  
 Epitheca: epitheca (s.f. I), abl. sing. epitheca; epivalva (s.f. I), abl. sing. epivalva. Epithecum: epithecum (s.n. II), abl. sing. epithecio.  
 Epivalve: see EPITHECA.  
 epizooiphyticus (adj. A): growing on zoophytes but not parasitic.  
 equal: aequalis (adj. B), aequus (adj. A), parilis (adj. B), consimilis (adj. B), 'very like'. equalling: aequans (part. B, with acc.), equally: pariter (adv.), aequo (adv.). equal-sided: aequilaterus (adj. A). 135  
 Equator: equator (s.m. III).  
 equatorial: aequatorius (adj. A).  
 equidistant: aequidistans (adj. B).  
 equinus (adj. A): pertaining to horses: *stercus equinus*, horse manure, horse droppings. equorum: of horses, gen. pl. of equus (s.m. II).  
 equitans (part. B): equitant, conduplimate and overlapping in two ranks, the base of the folded outer leaf clasping the base of the one opposite and this in turn clasping the base of the leaf opposite it; lit. 'riding', the lower leaf when turned horizontally seeming to ride upon the one above it. 377  
 erasus (part. A): scraped off, e.g. when the outer layer has been lost or shed.  
 erect: erectus (part. A), rectrus (part. A).  
 erectiusculus (adj. A): somewhat or almost erect, erecto-patens (adj. B): spreading at an angle of about 45°. 387  
 erem-: in Gk. comp., desert-.  
 erga (prep. with acc.): over against, opposite to.  
 ergo (adv.): because of (with gen.), accordingly, therefore.  
 ergens (part. B): rising, raising itself.  
 erio-: in Gk. comp., woolly-, wool-*eriocalyx*, with woolly calyx; *eriogynus*, with woolly ovary; *eriphorus*, wool-bearing; *eriohyllus*, woolly-leaved; *erorrhachis*, with woolly rachis; *eriospermus*, with woolly seeds. These and similar Latinized Gk. compounds are used only as epithets.  
 erosus (part. A): erose, having an irregularly toothed or apparently gnawed margin. 184  
 erraticus (adj. A): wandering to and fro.  
 Error: erratum (s.n. II), abl. sing. errato, nom. pl. errata; error (s.m. III. v.), abl. sing. errore, nom. pl. errores.  
 ernescens (part. B): reddening, blushing, rose.  
 eruditus (part. A): learned, cultured.  
 erumpens (part. B): breaking through; *acervuli erumpentes*, acervuli bursting the surface.  
 Eruptio (s.f. III): a bursting forth, eruption, explosion.  
 erythrinus (adj. A): red. erythro-: in Gk. comp., red-; *erythrocalyx*, with red calyx; *erythrocarpus*, red-fruited; *erythrichilus*, red-lipped; *erythrogrammus*, with red lines; *erythromelanus*, blackish red; *erythropoecilus*, red-spotted; *erythrorhachis*, with red rachis; *erythrosepalus*, red-sepaled; *erythrostachys*, with red spike; *erythrostictus*, red-spotted; *erythrotrichus*, red-haired. These and similar Latinized Gk. compounds are used only as epithets.  
 escaping: evadens (part. B), elabiens (part. B).  
 -escens (part. B): present part. ending used in forming adjective to indicate a process of becoming without full attainment reached.  
 esculentus (adj. A): edible, q.v.  
 esceptatus (adj. A): not partitioned, lacking septa.  
 especially: apprime (adv.), praecipue (adv.), praesertim (adv.).  
 essential: essentials (adj. A): *character essentialis*, diagnosis, brief statement of most important characters. essentially: admodum (adv.) 'fully', quasi (adv.) 'almost', revera (adv. phrase) 'in fact'.  
 estriatus (adj. A): not striate.  
 Estuary: aestuarium (s.n. II), acc. sing. aestuarium, abl. sing. aestuaria, nom. acc. pl. aestuaria, abl. pl. aestuariis; species *intertropicae littora limosa ad aestuaria fluviorum vegetatione arborea insulibri dense obumbrant*, the inter-tropical species the muddy shores at the estuaries of rivers with unhealthy woody vegetation densely cover over.  
 et (conj.): and, q.v.  
 etiam (conj.): and also, furthermore, even; etiam atque etiam, constantly, again and again.  
 etsi (conj.): although.  
 -etum (s.n. II): in L. comp., place dominated by a given plant; *castanetum*, a wood of chestnut; *ericetum*, heath.  
 eu-: in Gk. comp., well, good, thoroughly, completely, truly, as in the generic names *Eucalyptus*, 'well-covered'; *Eucharis*, 'charming'; *Euclidium*, 'well-shut'; *Eulophia*, 'with a good crest'; *Euonymus*, 'of good name, fortunate', ironically referring to its poisonous properties (recorded in Theophrastus, *Enq.* III. xviii. v. 37); *Euptelea*, 'good elm'; *Euscaphis*, 'good vessel'; *Eusideroxylon*, 'true ironwood'. Also formerly much used in sense of 'true, original, primitive' in subgeneric and sectional names and infraspecific epithets for the subdivision containing the type of the name thus prefixed without reference to its linguistic origin, as in *Rhododendron* subg. *Eurhododendron*, *Prunus* sect. *Euphrus*, *Bowlesia* sect. *Eubowlesia*, *Saxifraga pedemontana* subsp. *eupedemontana*, *S. tridactylites* subsp. *eutridactylites*. Some generic names beginning with *Eu-* commemorate persons, e.g. *Eugenia* after Prince Eugen of Savoy, *Eulalia* after the botanical artist Eulalia Delile, *Eupatorium* after King Mithridates VI Eupator of Pontus and *Euphorbia* after the Numidian physician Euphorbus; *euanthus*, with beautiful flowers; *eubotrys*, with well-developed clusters; *eucallus*, beautiful; *euchaites*, with long hair; *euchromus*, *euchrous*, well-coloured; *eudoxus*, of good report; *eumorphus*, well-formed; *euprepes*, comely.  
 eucarpic: eucarpicus (adj. A).

**Euphyllum** (s.n. II): true leaf, foliage leaf as opposed to cataphyll (bract, reduced or rudimentary form of leaf); *see CATAPHYLL*, *euphyloideus* (adj. A): resembling foliage leaves; *bracteae primariae euphyloideae*, primary bracts like foliage leaves.

**eutopicus** (adj. A): twining with the sun, twisted from left to right; *see TWINING*. **evacuatus** (part. A): left empty; cf. *EMPTY*.

**evadens** (part. B): escaping, going out.

**evanescens** (part. B), *evanidus* (adj. A): vanishing, passing away, quickly disappearing or fading, lasting only a short time. *evanidinervius* (adj. A): with nerves becoming faint and disappearing before reaching the margin.

**even** (adv.): *etiam* (adv.).

**even** (adj.): *planus* (adj. A) 'flat', *aequus* (adj. A) 'uniform', *aequatus* (part. A), 'made even, levelled'. 259

**Evening**: *vesper* (s.m. II or III), *gen. sing. vesperi or vesperis*, *abl. sing. vespero or vesperi*, belonging to evening: *vespertinus* (adj. A).

**evenly**: *aequaliter* (adv.), *aequabiliter* (adv.).

**eventually**: *demum* (adv.), *denique* (adv.).

**ever**: *aliquando* (adv.) 'at any time', *semper* (adv.) 'always, at all times'.

**evergreen**: *sempervirens* (adj. B); cf. *PERHIEMANS*.

**aversus** (part. A): everted, abruptly turned outwards, turned inside out.

**every**: *omnis* (adj. B); *in fere omni segmento*, in almost every segment; *e fere omni cellula*, from nearly every cell; cf. *QUISQUE*.

**everyway**: *quoquoversus* (adv.), *omnino* (adv.).

**everywhere**: *ubique* (adv.), *passim* (adv.).

**evident**: *evidens* (adj. B), *manifestus* (adj. A), *perspicuus* (adj. A), *visibilis* (adj. B). **evidently**: *evidenter* (adv.), *manifeste* (adv.), *perspicue* (adv.).

**evolutus** (part. A): unfolded, unrolled, developed.

**evulgatus** (part. A): published.

**ex, e** (prep. with abl.): from, out of, away from, after, through, by reason of; *ex* is always used before vowels, and even before consonants is used quite as commonly as *e*; *lamina e basi ad apicem 4 cm. longa*, blade from the base to the tip 4 cm. long; *ex affinitate Epidendri ramosi*, of the affinity of *Epidendrum ramosum*; *inflorescentiae ex axillis foliorum summorum 1-3 prodeentes*, inflorescences from axils of upper leaves 1-3 produced; *ex comparatione specimenum siccorum cum*

*planta viva in horto*, from comparison of dried specimens with a living plant in the garden; *e descriptione*, according to the description, judging from the description alone; *flores caerulei (e collectore)*, flowers blue (according to the collector); *pulvini e ramis numerosis aggregatis compositi*, cushions out of numerous crowded together branches made up; *ovarium constat ex duabus carpellis*, ovary consists of two carpels; *ex Rossia specimina plura vidi*, from Russia many specimens I have seen; *ex specimibus siccis originariis et ex litteris auctoris*, from original dried specimens and from letters of the author; *hybrida ex Pulmonaria mollissima et P. officinali*, hybrid from *Pulmonaria mollissima* and *P. officinalis*; *folia nervis lateribus e nervo medio sub angulo 70°-80° abeuntibus*, leaves with lateral nerves from mid nerve at angle of 70°-80° departing; *semina ex horto botanico*, seeds from botanic garden; *baccæ e viridi rubentes*, berries from green becoming red, berries greenish-red; *baccis e nigro rufis*, with berries red inclining to black; *magna ex parte*, in a great degree; *ex more*, according to custom; *ex contrario*, on the other hand, on the contrary; *nomen derivatum ex rhachi foliorum alata*, name derived from winged rachis of leaves; *nomen e lingua graeca sumptum est*, name from the Greek language taken is; *ex sententia cl. monographi generis, qui plantam nostram vidi*, species nova ex *Antillis minoribus est*, according to the distinguished monographer of the genus, who our plant saw, a new species from the Lesser Antilles it is.

**ex** (prefix): *in L. comp.*, without, lacking, destitute of, un-, -less; *see E*, *AN-exalatus*, wingless; *exaluminatus*, *exaluminosus*, without endosperm, the embryo occupying the whole space within the seedcoat; *exannulatus*, without an annulus; *exaristatus*, awnless; *exindusiatius*, without an indusium; *exscapus*, stalkless; *exstipulatus*, without stipules; *exsuccus*, without juice, dry.

**exact**: *accuratus* (part. A) (used only of statements and things), *diligens* (part. B) (used of persons), *exactus* (part. A) (measured; used only of numbers). **exactly**: accurate (adv.), diligenter (adv.), ad amissum (adv. phrase).

**exalbescens** (part. B): becoming white. **exalbidus** (adj. A): whitish. **exaltatus** (part. A): raised high, lofty.

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**exaratus** (part. A): furrowed (*usu. with more or less parallel grooves, lit. 'ploughed'*).

**exasperatus** (part. A): covered with short hard points, *lit. 'roughened'*. 266

**excavatus** (part. A): hollowed out in a curve, e.g. at insertion of leaf, or as a deep pit.

**excedens** (part. B): rising above, over-topping, exceeding.

**exceedingly**: *admodum* (adv.), *magnopere* (adv.), *summopere* (adv.), *valde* (adv.).

**excellent**: *optimus* (adj. A), *egregius* (adj. A).

**excellently**: *optime* (adv.), *egregie* (adv.), *eximie* (adv.).

**exculus** (part. A): lofty, high.

**excentricus** (adj. A): eccentric, one-sided, placed out of the centre; *stipes excentricus*, stipe attached between centre and edge of pileus; *oosporis gutta excentrica*, with oospores having an oil-drop to one side.

**except for**: *praeter* (adv. and prep. with acc.); *herba praeter inflorescentiam hirsutam glabra*, herb except for the hairy inflorescence glabrous; *praeter titulum mutatum nulla nota differt*, except for the changed title by no matter it differs; cf. *NISI*. **excepting**, *excepted*: *exceptus* (part. A); *herba (scapo glabro excepto) hirsuta*, herb (with the glabrous scape excepted) hairy.

**exceptus** (part. A): taken from, selected, chosen.

**excessively**: *nimir* (adv.).

**Excipule**: *excipulum* (s.n. II), *abl. sing. excipulo, nom. pl. excipula, abl. pl. excipulis*; *excipulum integrum fuligineum ad basim planatum, labiis erectis superne conniventibus*, excipule entire dark brown at base flattened, with lips erect above coming together.

**excisus** (part. A): cut out (*often referring to sinuses*). **exclusively**: *solum* (adv.), *nonnisi* (adv.), *omnino* (adv.).

**exclusus** (part. A): excluded; *descriptione exclusa*, with the description excluded.

**ex crescens** (part. B): growing out, enlarging, usually abnormally. **excretus** (part. A): full grown.

**excurrents** (part. B): excurrent, running out beyond, e.g. mainstem of a conifer, veins of a leaf; *folia costa percurrente vel breviter excurrente*, leaves with midrib percurrent or shortly excurrent.

**excusus** (part. A): shaken off, removed, plucked out.

**Exemplum** (s.n. II): example, specimen.

**exesus** (part. A): eaten up, irregularly eroded on the surface.

**exhauriens** (part. B): making empty, taking out, exhausting.

**exhausted**: *effuctus* (adj. A).

**exhibiting**: *exhibens* (part. B), *ostendens* (part. B), *praebens* (part. B).

**exiens** (part. B): going forth, springing forth, coming up; *inflorescentiae ex axillis exeentes*, inflorescences arising from the axis; cf. *INIENS*.

**exiguus** (adj. A): weak, feeble, little. 339

**exiliens** (part. B): springing out. **exilis** (adj. B): small, meagre, weak, thin, slender.

**eximie** (adv.): exceedingly, excellently.

**Exit**: *exitus* (s.m. IV).

**exo-**: *in Gk. comp.*, outward, outside; opposite of *ENDO-*; *exostylis*, with projecting style.

**Exocarp**: *exocarpium* (s.n. II), *abl. sing. exocarpio*.

**exogenous** (adj. A): exogenous, produced from outer tissue or on the outside of another body.

**Exoperidium**: *exoperidium* (s.n. II), *abl. sing. exoperidio*.

**exortens** (part. B): coming out, arising. **exortus** (part. A): sprung from, arisen out of.

**Exospore**: *exosporium* (s.n. II), *abl. sing. exosporio*.

**Exothecium**: *exothecium* (s.n. II), *abl. sing. exothecio*.

**exotic**: *exoticus* (adj. A); cf. *ALIENUS, FOREIGN*.

**Expansio** (s.f. III): expansion; *ante expansionem*, before expansion.

**expansus** (part. A): expanded, spread out.

**expelled**: *depulsus* (part. A).

**expers** (adj. B): devoid of, without; used with gen. and abl.; *sepala glandum experta*, sepals devoid of glands.

**explanatus** (part. A): flattened, outspread, explained; *in statu explanato*, in a flattened-out state.

**Explicatio** (s.f. III): explanation, exposition, analysis.

**exploding**: *explodens* (part. B).

**explosively**: *eruptio* (*abl. sing. of eruptio*, q.v.).

**exposed**: *expositus* (part. A), *apertus* 'open', *nudus* (adj. A) 'naked'.

**express** (part. A): prominent, clearly exhibited; *costa supra anguste impressa infra late expressa*, midrib narrowly impressed above broadly prominent below.

**expulsus** (part. A): ejected, expelled.

**exsculptus** (part. A): chiselled out, pitted with small depressions.

**exsertus** (part. A): exserted, thrust forth, protruding from or extending beyond surrounding organs.

**Exsiccata** (s.f. I): an exsiccata, a set of dried specimens usually provided with printed labels.

**Exsiccatum** (s.n. II): dried specimen; cf. DRIED.

**exsiccatus** (part. A): dried; *planta exsiccatae*, herbarium specimens; *fungi exsiccati*, dried fungi.

**extans** (part. B): projecting.

**extipulate**: extipulatus (adj. A), estipulatus (adj. A).

**extructus** (part. A): put together, constructed.

**exsuccus** (adj. A): juiceless.

**exsudans** (part. B): exuding. **Exsudatum** (s.n. II): exudate.

**exsulcus** (adj. A): not furrowed.

**exsurgens** (part. B): rising out of.

**extended**: extensus (part. A), productus (part. A), prolongatus (part. A), provectus (part. A), extending: extensus (part. A). Extension: extensio (s.f. III).

**extense** (adv.): at length, extensively (part. A). extensus (part. A): stretched out, extended.

**exter** (adj. A): on the outside, from or of another country, foreign. exterior (adj. comp., m. and f.): **exterius** (n.): outward, outer, exterior. **externus** (adj. A): outward, external.

**external**: see EXTER, OUTER. externally: see EXTRA, OUTSIDE.

**extimus** (adj.): outermost, farthest, most remote.

**extine**: extina (s.f. I).

**extra** (prep. with acc.): outside of, beyond, apart from, besides, in addition to.

**extra** (adv.): on the outside, externally.

**extra-axillaris** (adj. B): extra-axillary, i.e. arising on internode beyond or outside an axil, not direct from an axil.

**extraneus** (adj. A): extraneous, strange, foreign, not related.

**extractus** (part. A): drawn forth, dragged out.

**extrarius** (adj. A): outward, external, placed on the outside.

**extremely**: maxime (adv.), magnopere (adv.). **Extremum** (s.n. II): an end, the end, the last; *ad extremum*, at the end.

**Extremitas** (s.f. III): extremity; *folia ad extremitates ramorum*, leaves at tips of branches.

**extremum** (adv.): at last, finally. **extremus** (adj. A): outermost, extreme, last. **extrinsecus** (adv.): from outside, on the outside.

**extrorsus** (adv.): extorsely, towards the outside, opening on the outside. 421

**extrusus** (part. A): pushed out.

**extus** (adv.): outside, on the outside.

**Exudate**: exudatum (s.n. II). **exuding**: exsudans (part. B).

**Exul**, **Exsul** (s.f. III. x): exile, banished person; *Plantagineae ex nullo climate exules*, the Plantagineae from no climate exiles.

**exutus** (part. A): stripped off, cast off, shed.

**Eye**: oculus (s.m. II), oculus (s.m. II), *in Gk. comp.*, omma- (s.n. III.), -ophthalmus (adj. A); *melanophthalmus*, black-eyed. marked with eye-like spots: ocellatus (adj. A). Eye-spot: stigma (s.n. III). with naked eye: oculo nudo (adv. phrase).

## F

**fabiformis** (adj. B): bean-shaped.

**Fabrica** (s.f. I): structure; *genus fabrica antherarum distincta*, genus distinct by the structure of the anthers; cf. COM-PAGES, STRUCTURE. **fabricatus** (part. A): constructed, fashioned.

**Face**: superficies (s.f. V). **facial**: *facialis* (adj. B).

**faciens** (part. B): making, producing, creating.

**Facies** (s.f. V): shape, general appearance, external form; see APPEARANCE, VIEW.

**facile** (adv.): easily. **facilis** (adj. B): easy.

**facin**: *aspiciens* (part. B), *spectans* (part. B).

**factitius** (adj. A): artificial, made by art.

**factus** (part. A): made, done.

**facultative**: facultativus (adj. A).

**faded**: decolor (adj. B).

**faecal**: *faecalis* (adj. B). **Faeces**: *faeces* (nom. pl. of *faex*, s.f. III), *gen. faecum* or *faecium*, *abl. faecibus*.

**faint**: dilutus (part. A), tenuis (adj. B), inconspicuus (adj. A). faintly: dilute (adv.) (used only of colours), leviter (adv.).

**fairly**: satis (adv.).

**falcatus** (adj. A): falcate, curved like a sickle. **falcato-secundus** (adj. A): falcate and turned to one side of the stem.

**falciformis** (adj. B): shaped like a scythe or sickle. 38

**Fall**: lapsus (s.m. IV), q.v.

**fallax** (adj. B): deceptive, fallacious; cf. DECIPiens.

**fallen**: caducus (adj. A), delapsus (part. A). **falling**: *cadens* (part. B).

**false**: falsus (adj. A), *in comp.* pseudo-falsely: false (adv.), spurius (adv.), perparam (adv.).

**falsinervis** (adj. B): with nerves formed of cellular (not fibrovascular) tissue. 362

**Family**: *familia* (s.f. I), *acc. sing. familiam*, *nom. pl. familiae*, *acc. pl. familias*.

**fan-shaped**: *flabellatus* (adj. A), *flabelliformis* (adj. B).

**far off**; *procul* (adv.), *longe* (adv.).

**farciminiformis** (adj. B): sausage-shaped.

**farctus** (part. A): stuffed, filled, or solid with tissue softer than the outside; cf. HOLLOW.

**fariam** (adv.): *in L. comp.*, -ranked, in a row or line; *unifariam*, in one row; *bifariam*, in two rows. 489

**Farina** (s.f. I): flour-like powdery covering. **farinaceus** (adj. A): starchy.

**farinosus** (adj. A): mealy, covered with farina. 331

**faris** (adj. A): *in L. comp.*, -ranked; *folia quadrifaria*, leaves four-ranked.

**farthest**: *ultimus* (adj. A), *extremus* (adj. A).

**farilis** (adj. B): stuffed; cf. FARCTUS.

**fasciarius** (adj. A): band-shaped. **fasciatus** (adj. A): fasciate, teratologically grown together, as of several stems into one; marked transversely with broad parallel stripes of colour. 104, 496

**Fascicle**: *fasciculus* (s.m. II), *acc. sing. fasciculum*, *abl. sing. fasciculo*, *nom. pl. fasciculi*, *acc. pl. fasciculos*, *abl. pl. fasciculus*; *inflorescentia ad fasciculum simplicem reducta*, inflorescence to a simple cluster reduced; *fasciculi brevissimi vix ad 1 millimeter longi*, in vivo *purpureo-sanguinei* (fide Ehrenb.), *in speciminibus siccis griseo-virides*, fascicles very short scarcely 1 mm. long, in a living state purple-blood-red (according to Ehrenberg), in dried specimens grey-green; *trichomata in fasciculos squamuliformes discretos libere natantes aggregata*, trichomes in fascicles scale-like separate freely swimming clustered together.

**fasciculatus** (adj. A): clustered, growing in bundles. **Fasciculus** (s.m. II): fascicle, bundle, cluster of pedicels, etc., part ('livraison', 'Heft') of volume. 487

**fastened to**: *affixus* (part. A).

**fastigiatus** (adj. A): fastigiate, with branches clustered, parallel and erect, giving a narrow elongated habit, (*in bryology*) with branches reaching to the same height. Not to be confused with *fastigatus* (part. A), high, exalted. 494

**fastuosus** (adj. A): proud, haughty.

**Fat**: *sebum* (s.n. II), *gen. sing. sebi*; *pingue* (s.n. III), *gen. sing. pinguis*.

**fat**: *pinguis* (adj. B), *obesus* (adj. A).

**Fathom**: *orgya* (s.f. I), *hexapodium* (s.n. II).

**faticens** (part. B): disintegrating, crumbling, disappearing.

**Fauces** (s.f. III. i. pl.): throat, defile, gorge. In class. L. used only in pl., in bot. L. mostly in singular. **Faux** (s.f.

III. i): upper part of throat, orifice of calyx or corolla, mouth, entrance, narrow way, defile, gorge, pass.

**faveolatus** (adj. A): finely honeycombed.

**favosus** (adj. A): honeycombed, i.e. covered with regular angled depressions. 250

**fawn**: *hinnuleus* (adj. A); *in Gk. comp.*, *elapho-*.

**Feature**: *proprietas* (s.f. III).

**Fecundatio** (s.f. III): fertilization; *varietates e fecundatione artificiali ortae*, varieties derived from artificial fertilization. **fecundus** (adj. A): fruitful, fertile; cf. STERILE.

**felted**: *coactus* (part. A).

**female**: *femineus* (adj. A), *foemineus* (adj. A); *flores feminei*, female flowers; *in Gk. comp.*, *gyn-*, *thely-*.

**Fenestra** (s.f. I): window. **fenestratus** (adj. A), *fenestralis* (adj. B): windowed, provided with openings. **fenestrellatus** (adj. A): with little windows or openings.

**fer** (adj. A, suffix): *in L. comp.*, -carrying. *caulis florifer*, flower-bearing stem; *panicula fructifera*, fruit-bearing panicle.

**ferax** (adj. B): fruitful, fertile. Not to be confused with *ferox*.

**fer** (adv.): nearly, almost, for the most part, about.

**ferens** (part. B): carrying, bearing.

**ferment-producing**: *zymogenus* (adj. A).

**Fermentation**: *fermentatio* (s.f. III).

**Fermentum** (s.n. II): yeast.

**Fern**: *filix* (s.f. III. i), *gen. sing. filicis*, *nom. pl. filices*. **fern-like**: *filicinus* (adj. A); cf. FILIC-.

**ferox** (adj. B): fierce. Generally used of very spiny plants.

**ferreus** (adj. A): iron, relating to iron; *via ferrea*, railway.

**ferruginescens** (adj. B): becoming rusty-red. **ferrugineus** (adj. A): rusty, light brown with a little mixture of red.

**Ferrum** (s.n. II): iron.

**fertile**: *fertilis* (adj. B), *fecundus* (adj. A).

**Fertilization**: *fecundatio* (s.f. III).

**ferus** (adj. A): wild; cf. SYLVESTRIS.

**few, a**: aliquot (num. indecl.), q.v. **few**: *pauci* (adj. A). **few-**: *in L. comp.*, *pauci-*; *in Gk. comp.*, *oligo-*, *spano-*.

**Fibre**: *fibra* (s.f. I), *nom. pl. fibrae*, *acc. pl. fibras*, *abl. pl. fibris*; *bulborum tunicae tandem in fibras parallelas apicem versus vel in totum solutae*, of the bulbs the tunics at length into fibres parallel towards the tip or entirely breaking up; *vitta fibrarum seribus 2-3 formata*, band formed from 2-3 series of fibres.

**Fibril**: *fibrilla* (s.f. I).

**fibrillosus** (adj. A): fibrillose, covered with firm thin threadlike fibres. **fibrosus** (adj. A): composed of separable threads or fibres, fibrous. 329

**fibula** (s.f. I): clamp connexion of fungal hypha, *lit.* 'clasp, buckle, pin, brace'. **fibulatus** (adj. A): provided with clamps. **fibuliger** (adj. A): clamp-bearing.

**fici-**: in *L. comp.*, relating to figs; *see FIG-*.

**ficulneus** (adj. A): of the fig-tree.

**fide** (abl. sing. of *fides*): according to, *lit.* by the faith, by the assurance (of); *fide Smith in litt.*, according to Smith in a letter; *fide collectoris*, according to the collector; *cf. TESTE*.

**fidus** (adj. A): in *L. comp.*, divided (usually within outer third). 199

**Field**: ager (s.m. II), *abl. pl.* agris, 'cultivated land, whether arable or pasture, as opposed to the wild', arvum (s.n. II), *abl. pl.* arvis, 'arable land as opposed to pasture'. pertaining to fields: agrestis (adj. B), arvalis (adj. B), arvensis (adj. B).

**fierce**: ferox (adj. B), q.v.

**Fig**: *ficus* (s.f.), gen. sing. *fici* or *ficus*, *abl. sing.* *fico* or *ficu*, nom. pl. *fici*, gen. pl. *ficorum*, *abl. pl.* *ficis*.

**fig-**: in *L. comp.*, *fici-*, in *Gk. comp.*, syco-; *ficifolius*, fig-leaved, i.e. with deeply 3-7-lobed digitate leaves suggesting those of *Ficus carica*; *syco-carpus*, with fig-like fruit.

**Figura** (s.f. I): shape, figure. **figuratus** (part. A): of definite shape.

**Filament**: *filum* (s.n. II), *abl. sing.* *filo*, nom. pl. *fila*, *abl. pl.* *filis*, filamentum (s.n. II), *abl. sing.* *filamento*, nom. pl. *filamenta*, *abl. pl.* *filamentis*; *fila laxe intricata vel valde contorta vix flexilia haud sine ruptura extricanda*, filaments loosely entangled or strongly twisted together scarcely pliant not without breaking to be unravelled; *fila repentina irregulariter ramosa e cellulis oblongis composita*, filaments creeping irregularly branched from cells oblong made up; *thallus e disco basali et filis erectis constructus*, thallus from a basal disc and erect filaments built up; *discus basalis e filis repentibus coherentibus subdichotome divisis compositus*, basal disc from filaments creeping cohering almost dichotomously divided made up; *filamenta simplicia fere per longitudinem aequabiliter 4  $\mu$  crassa*, filaments simple almost throughout their length evenly 4  $\mu$  thick; *alga filamentis erectis parallelis vel intricatis fragilibus a basi ad apicem gradatim angustatis*, alga with

filaments erect parallel or entangled fragile from base to tip gradually narrowed; *filamentum* is used both for the filaments of stamens and the vegetative filaments of Algae, *filum* only for the latter; *cf. STAMEN*.

**filamentous**: *filamentosus* (adj. A).

**filii**: in *L. comp.*, thread-; *filicaulis*, with thread-like stem; *filifer*, thread-bearing; *filifolius*, thread-leaved; *filipendulus*, hanging by a thread, e.g. the swollen parts of tuberous roots connected by narrow thread-like parts.

**Filia** (s.f. I): daughter.

**filic-**: in *L. comp.*, relating to ferns; *filicifolius*, with fern-like leaves; *filiciformis*, *filicinus*, fern-like.

**filiformis** (adj. B): thread-like. 49

**Filius** (s.m. II): son; *Hooker filius*, *Hook. fil.*, *Hook. f.*, the younger Hooker, i.e. Joseph Dalton Hooker (1817-1911), son of William Jackson Hooker (1785-1865).

**Filix** (s.f. III. i): fern.

**filled**: *impletus* (part. A), *refertus* (part. A), *repletus* (part. A), *completus* (part. A), *plenus* (adj. A); *semen dorso late concavum, sulco arillo spongioso replete*, seed on the back broadly concave, with the furrow by a spongy aril filled; *protoplasmus olei plenus*, protoplast full of oil. **filling**: *complens* (part. B). *implens* (part. B); *chlorophyllum cellulam complens*, chlorophyll filling the cell.

**Filum** (s.n. II): thread, filament of alga; *see FILAMENT*.

**fimbri-**: in *L. comp.*, fimbriate; *fimbri-calyx*, with fimbriate calyx.

**Fimbria**: *fimbria* (s.f. I): nom. pl. *fimbriae*, *abl. pl.* *fimbriis*. **fimbriate**: *fimbriatus* (adj. A). 286

**fimicarius** (adj. A): growing on dung. **Fimus** (s.m. II): dung, q.v.

**final**: *ultimus* (adj. A). **finally**: *postremo* (adv.), *extremum* (adv.), *ad extremum*, *denique* (adv.), *tandem* (adv.).

**findens** (part. B): tearing, splitting.

**fine**: *tenuis* (adj. B). **finely**: *subtiliter* (adv.).

**figens** (part. B): representing.

**Finger**: *see DACTYL*.

**finger-like**: *digitiformis* (adj. B).

**Finis** (s.f. III): boundary, limit, border, end.

**finished**: *terminatus* (part. A).

**firm**: *fimus* (adj. A) 'stable, steady', *solidus* (adj. A) 'dense, not hollow'.

**firmly**: *firme* (adv.), *solide* (adv.).

**first**: *primus* (adj. A). **firstly**: *primitus* (adv.), *primo* (adv.), *primum* (adv.), *initio* (abl. of *initium*) 'in the beginning'.

**Fish**: *piscis* (s.m. III), gen. sing. *piscis*.

**Fish-pond**: *piscina* (s.f. I).

**fissi-**: in *L. comp.*, split-; *fissidens*, with split teeth; *see SPLIT*. **fissills** (adj. B): easily split. **Fissio** (s.f. III): fission.

**Fissure**: *fissura* (s.f. I), *rima* (s.f. I); *areolae fissuris tenuibus separatae*, areoles by narrow fissures separated.

**fissured**: *fissuratus* (adj. A).

**fissus** (part. A): cleft, i.e. cut to about midway or more. 194

**fistulosus** (adj. A): fistular, i.e. hollow throughout, like a pipe, but closed at ends; *cf. PERFOSSUS*. 7

**fit**: *aptus* (part. A), *aptatus* (part. A); *ad vescendum aptum*, fit to eat.

**fitted together**: *interordinatus* (adj. A).

**five**: *quinque* (num. adj. indecl.) 'five', *quintus* (adj. A) 'fifth', *quini* (num. adj. distr. pl.), 'five each', *quinquies* (adv.) 'five times'; *petala quinque rubra*, petals 5 red; *petalis quinque rubris*, with petals 5 red. **five**: in *L. comp.*, *quinqu-*, *quinq-*, *quinq-*, *quinqui-*, in *Gk. comp.*, *penta-*, *pent-*, *pentagonus*, *quinquangularis*, *quinquangulatus*, 5-angled; *pentachaeta*, *quinquesetus*, 5-bristled; *pentanthus*, *quinqueflorus*, 5-flowered; *pentaphyllus*, *quinquefolius*, with 5-leaves or leaflets; *pentaneurus*, *quinquenervus*, *quinquenervis*, 5-nerved; *pentagnus*, *quinquestylus*, 5-styled; *pentaphlebius*, *quinquevulus*, 5-veined; *see PENTA-, QUINQUE-*.

**fixed**: *certus* (adj. A) 'certain', *fixus* (part. A) 'immovable'. **fixed to**: *affixus* (part. A), with dat. or *ad* and acc. **flabellatus** (adj. A), *flabelliformis* (adj. B): flabellate, fan-shaped. 64

**flaccidus** (adj. A): *flaccid*, not able to hold up its own weight.

**flagellar**: *flagellaris* (adj. B).

**flagelliform**: *flagelliformis* (adj. B), *flagellaris* (adj. B). 47

**Flagellum**: *flagellum* (s.n. II), nom. pl. *flagella*, *abl. pl.* *flagellis*.

**flammeus** (adj. A): flame-coloured, fiery red, scarlet.

**flask-shaped**: *ampulliformis* (adj. B).

**flat**: *planus* (adj. A). **flattened**: *complanatus* (part. A). **flattened horizontally**: *applanatus* (adj. A).

**flavescens** (adj. B), *flavidus* (adj. A): yellowish, pale yellow. *flavivorens* (adj. B): green stained with yellow, yellowish-green. **flavus** (adj. A): yellow, paler than *luteus*; *flavus dresdanus*, dresden yellow (H.C.C. 64); *flavus imperialis*, empire yellow (H.C.C. 60.3); *flavus neapolitanus*, naples yellow (H.C.C. 40.3).

**Flesh**: *caro* (s.f. III. vi), *abl. sing.* *carne*.

**flesh-coloured**: *carneus* (adj. A). **fleshy**: *carnosus* (adj. A), *succulentus* (adj. A).

**flexibilis** (adj. B), *flexilis* (adj. B): flexible. **flexuosus\*** (adj. A): *flexuosus*, zigzag, bent alternately in opposite directions.

**flexus** (part. A): bent. 413

**floating**: *natans* (part. B), *fluitans* (part. B); *folia natantia*, floating leaves. 391

**floccosus** (adj. A): floccose, with tufts of soft hairs, (in Algae) having appearance of matted woolly hairs.

**flooded**: *inundatus* (part. A), q.v.

**Flora**: *flora* (s.f. I).

**floralis** (adj. B): floral, relating to the flower.

**Florescentia** (s.f. I): period of flowering.

**Floret**: *flosculus* (s.m. II), *abl. sing.* *flosculo*, nom. pl. *flosculi*, *abl. pl.* *flosculis*.

**floribundus** (adj. A): profusely flowering. **floribus** (dat. and abl. pl. of *flos*): with flowers; *see FLOWER*.

**Floricanes**: *floricanna* (s.f. I); *primocannae erectae*, *floricanna procumbentes*, *foliis floricannarum trifoliolatis*, primocanes (biennial shoots in first year) erect, floricanes (biennial shoots in second year, i.e. flowering state) procumbent, with leaves of floricanes 3-foliate.

**floridus** (adj. A): abounding in flowers, profusely flowering. **florifer** (adj. A), *floriger* (adj. A): bearing flowers, flowering. **Florilegium** (s.n. II): a collection of paintings of flowers; *cf. Blunt & Stearn, Art. Bot. Illustr.* 123-131 (1950). **florus** (adj. A), *florulentus* (adj. A): abounding in flowers, (profusely) flowering.

**Florula** (s.f. I): a small flora.

**Flos** (s.m. III. iv): flower, q.v. **Flosculus** (s.m. II): floret, q.v.

**Flour**: *farina* (s.f. I), *abl. sing.* *farina*. **floury**: *farinosus* (adj. A) 'covered with meal', *farinaceus* (adj. A) 'of mealy composition', *aleurodes* (adj. Gk.), (used only as specific epithet).

**flourishing**: *vigens* (part. B).

**Flow**: *fluxus* (s.m. IV).

**Flower**: *flos* (s.m. III. iv), *acc. sing.* *florem*, gen. sing. *floris*, dat. sing. *flori*, *abl. sing.* *flore*, nom. and acc. pl. *flores*, gen. pl. *florum*, dat. and abl. pl. *floribus*; *flos solitarius sessilis magnus fragrans*, flower solitary sessile large fragrant; *flore solitario sessili fraganti*, with flower solitary sessile fragrant; *pedicelli florum superantes*, pedicels exceeding the flower; *pedicelli longitudine florum*, pedicels the length of the flower; *color florum variabilis*, colour of flowers variable; *flores parvi lutescentes*, flowers small yellowish; *floribus erectis parvis*, with flowers erect small; *spatha arte floribus accumbente*, *flore duplo majore*,

with spathe lying closely upon the flowers, twice as big as the flower.  
**flowering**: florens (part. B).  
**Flowering, Period of**: florescentia (s.f. I); *see ANTHESIS*; flowering before the leaves, *see PROTERANTHUS, PRAECOX*; flowering with the leaves, *see COAETANEUS, SYNANTHUS*; flowering after the leaves, *see HYSTERICANTHUS*.  
**flowing**: profluens (part. B).  
**fluitans** (part. B): floating, swimming. 391  
**Flumen** (s.n. III. vi): river, stream; *see RIVER*. **fluminialis** (adj. B), **fluminous** (adj. A): pertaining to rivers. **fluminensis** (adj. B): pertaining to Rio de Janeiro, Brazil.  
**flush with**: complanus (adj. A), with *dat*.  
**fluted**: striatus (adj. A).  
**fluviaticus** (adj. A), **fluviatilis** (adj. B): pertaining to rivers. **Fluvius** (s.m. II): river (*not so frequently used as flumen*); *see RIVER*.  
**Flexus** (s.m. IV): flow, flux.  
**foaming**: spumeus (adj. A), spumosus (adj. A).  
**Fodder**: pabulum (s.n. II).  
**foecundus** (adj. A): fruitful, fertile; *cf. STERILE*.  
**foemineus** (adj. A): female.  
**foetens** (part. B), **foetidus** (adj. A), **foetulentus** (adj. A): stinking, evil-smelling.  
**Fold**: plica (s.f. I), *abl. sing.* plica, *nom. pl.* plicae, *abl. pl.* plicis. **foided**: plicatus (adj. A).  
**foliaceous** (adj. A): foliaceous, leafy, leaf-like in texture or shape. **foliaceous** (adj. A): taking the place of a leaf. **foliaris** (adj. B): relating to the leaf. **foliatus** (adj. A): provided with leaves, leaf-bearing. **-foliatus** (adj. A), **-folius** (adj. A): *in L. comp.*, -leaved; *unifoliatus*, *unifolius*, with one leaf, one-leaved; *bifoliatus*, *bifolius*, two-leaved. **foliifer** (adj. A): leaf-bearing. **foliiformis** (adj. B): leaf-like. **foliosus** (adj. A): leafy, full of leaves, many-leaved. **Folium** (s.n. II): leaf, q.v. **-foliolatus**: leafletted. **Foliolum** (s.n. II): leaflet. 59, 465  
**Follicle**: folliculus (s.m. II), *abl. sing.* folliculo, *nom. pl.* folliculi, *abl. pl.* folliculis; *folliculi erecti pubescentes, reticulato-venosi vel etiam corrugati, stylis persistentibus 5 mm. longis inclusis 20 mm. longi*, follicles erect pubescent, reticulately veined or even corrugated, with the persistent 5 mm. long styles included 20 mm. long. **follicle-like**: follicularis (adj. B).  
**following**: sequens (part. B), secundus (adj. A); secundum (prep. with acc.), post (prep. with acc.).

**Fons** (s.m. III. ix): spring of water, fountain-head. **fontanus** (adj. A), **fontinalis** (adj. B): growing in or by springs.  
**Food**: cibus (s.m. II), pabulum (s.n. II), nutrimentum (s.n. II), alimentum (s.n. II). **pertaining to food**: cibarius (adj. A).  
**Foot**: pes (s.m. III. ii), *acc. sing.* pedem, *gen. sing.* pedis, *abl. sing.* pede, *nom. and acc. pl.* pedes, *gen. pl.* pedum, *abl. pl.* pedibus; *ad altitudinem 4,000 pedum super oceanum*, at 4,000 ft. (1220 m.) altitude above the ocean; *see -PODUS*.  
**Footpath**: semita (s.f. I).  
**for**: enim (conj.); per (prep. with acc.); *sinus per quasi dimidium longitudinis clausus*, sinus for almost half of its length closed; *cf. PRO, PROPTER*.  
**Foramen** (s.n. III): opening, aperture; *cf. APERTURA, RIMA*.  
**foratus** (part. A): pierced with holes.  
**foreign**: exoticus (adj. A), peregrinus (adj. A), alienus (adj. A); *INQUILINUS*.  
**Forest**: sylva (s.f. I). **Forester**: sylvarius (s.m. II), saltuarius (s.m. II), custos (s.m. III) sylvarum.  
**Fork**: furca (s.f. I), *acc. sing.* furcam, *abl. sing.* furca, *nom. pl.* furcae, *acc. pl.* furcas, *abl. pl.* furcis; *see ANTERIDIUM, RAY*. **forked**: furcatus (adj. A). 233  
**Forma** (s.f. I): form, figure, shape (*referring to general build, etc.*), form (*as taxonomic unit inferior to variety*); *planta sub variis formis inventur, quarum primariae sunt sequentes*, the plant is found under various forms, of which the chief are the following; *forma specialis*, special form, one distinguished by physiological rather than morphological characters.  
**formed**: factus (part. A), formatus (part. A), instar (s. indecl. with gen.) 'with form of'. **-formed**: *in L. comp.*, -formis, *in Gk. comp.*, -morphus. **forming**: faciens (part. B), formans (part. B).  
**formerly**: antea (adv.), olim (adv.), pridem (adv.), quondam (adv.).  
**Formica** (s.f. I): ant; *formicarum*, of ants. **Formicarium** (s.n. II): swelling at base of leaf or top of petiole or at node inhabited by ants. **formicarius** (adj. A): pertaining to ants. **formicosus** (adj. A): full of ants.  
**formosus** (adj. A): finely formed, handsome, beautiful. Not to be confused with *formosanus*, 'relating to Formosa (Taiwan)'.  
**fornicatus** (adj. B): with arches, relating to arches. **fornicatus** (adj. A): arched, provided with small arched scale-like appendages in corolla-tube, *lit.* 'vaulted'.  
**Fornix** (s.m. III. i): small scale, *lit.* 'arch, vault, brothel'; *corolla fauce*

*fornicibus lanceolatis integris vel bilobis in conum conniventibus clausa*, corolla at the throat by lanceolate entire or 2-lobed scales coming together as a cone closed; *fornices corollae prominuli vel exserti papillosi*, scales of the corolla prominent or exserted papillose.  
**fors** (adv.), **forsan** (adv.): perhaps, perchance. **fortasse** (adv.): perhaps, possibly, probably. **forte** (adv.): by chance, by accident, perhaps.  
**fortis** (adj. B): strong, powerful, vigorous. **fortiter** (adv.): strongly, vigorously.  
**fortuito** (adv.): at random, by chance, fortuitously, accidentally. **fortuitus** (adj. A): accidental.  
**forwards**: prorsum (adv.), prorsus (adv.).  
**Fossa** (s.f. I): ditch, trench; *in fossis*, in ditches. **Fossula** (s.f. I): a little furrow.  
**foul**: foedus (adj. A). **fouled**: foedatus (part. A), inquinatus (part. A).  
**found**: inventus (part. A).  
**Fountain-head**: fons (s.m. III. ix), *nom. pl.* fontes.  
**four**: quattuor, quatuor (num. adj. indecl.) 'four', quaterni (num. adj. dist. pl.) 'four each, four together', quartus (adj. A) 'fourth', quater (adv.) 'four times'; *sepala quatuor viridia*, sepals 4 green; *sepalis quatuor viridibus*, with sepals 4 green. **four**: *in L. comp.*, quadr-, quadri, *in Gk. comp.*, tetra-, quadrangularis, tetragonos, 4-angled; *quadricolor*, *tetrachromus*, 4-coloured; *quadricornis*, *quadricornutus*, *tetraceras*, 4-horned; *quadrifolius*, *tetraphyllus*, 4-leaved; *quadrifarius*, *tetrastichus*, 4-rowed; *quadriplatus*, *tetrapterus*, 4-winged; *see QUADR-, TETRA-*.  
**Fovea** (s.f. I): a small pit. **foveatus** (adj. A): pitted. **foveolatus** (adj. A): minutely pitted.  
**fovens** (part. B): embracing, enfolding, cherishing: *rhachis scrobiculis calyces fructigeros foventibus insculpta*, rachis sculptured with pits holding tightly the fruiting calyces.  
**fractiflexus** (adj. A): zigzag. **fractus** (part. A): broken.  
**fragile**: fragilis (adj. B), friabilis (adj. B).  
**Fragmentum** (s.n. II): piece broken off, fragment; *see FRUSTILLUM*.  
**fragrant**: fragrans (part. B); *see SMELL*.  
**fraternus** (adj. A): brotherly, closely allied.  
**freckled**: lentiginosus (adj. A).  
**free**: liber (adj. A), discretus (part. A).  
**freely**: libere (adv.) 'unrestrictedly', copiose (adv.) 'abundantly'.  
**frequent**: frequens (adj. B). **frequently**: saepe (adv.), plerumque (adv.), increbre (adv.).  
**fresh**: dulcis (adj. B) (*used of water*); **novus** (adj. A) 'new', vivus (adj. A) 'living'.  
**Fretum** (s.n. II), **Fretus** (s.m. IV): strait, sound, channel; *in freto Magellanico*, in Straits of Magellan; *fretum Herculeum*, the Strait of Gibraltar.  
**friabilis** (adj. B): fragile.  
**Frigidarium** (s.n. II): cool greenhouse, orangerie. **frigidus** (adj. A): cold.  
**Fringe**: fimbria (s.f. I). **fringed**: fimbriatus (adj. A), *in Gk. comp.*, thysano-.  
**from**: a or ab (prep. with abl.) 'distant from', e or ex (prep. with abl.) 'going away from'; unde (adv.) 'from which'; *plantae e basi ramosae*, plants branched from the base; *species nova a speciebus aliis floribus pedicellatis distinguenda*, new species from other species by its pedicellate flowers to be distinguished; *varietas a typo divergens*, variety diverging from the type; *planta ex Algeria introducta*, plant introduced from Algeria. *from above*: desuper (adv.).  
**Frond**: frons (s.f. III. ix), *gen. sing.* frondis, *abl. sing.* fronde, *nom. pl.* frondes, *gen. pl.* frondium, *abl. pl.* frondibus; *frons bipinnata ambitu ovata 25 cm. longa*, frond bipinnate in outline ovate 25 cm. long; *fronde late triangulare bipinnata, pinnis ad angulum 70°-80° patentibus*, with frond broadly triangular bipinnate, with pinnae at an angle of 70°-80° spreading; *frondes lineares iteratim dichotomae angulo acuto (40°-60°)*, *rarissime pinnatum divisae 2-3 pollicares, furcis mediis 8 mm. longis*, fronds linear repeatedly dichotomous at an acute angle (40°-60°) very rarely pinnately divided 2-3 inches long, with middle forks 8 mm. long.  
**Frondescens** (s.f. I): leafing, the unfolding of leaves.  
**frondosus** (adj. A): leafy, leaf-like, leaf-bearing, with well-developed leaves, full of leaves.  
**Frondula** (s.f. I): division of a pinnate frond.  
**Front**: frons (s.f. III); *a fronte visus*, seen from the front. **front**: anticus (adj. A). **frontal**: frontalis (adj. B). *in front*: antice (adv.).  
**frothy**: spumeus (adj. A).  
**frozen**: gelatus (part. A).  
**Fructiculus** (s.m. II): a single fruiting carpel of an apocarpous fruit; *cf. DRUPELET*. **fructifer** (adj. A): fruit-bearing, fructificans (part. B): fruiting.  
**Fructificatio** (s.f. III. vi): fruit-body, fructification (as used by Linnaeus, the flowering and fruiting organs ending one period of generation and beginning the next one, i.e. calyx, corolla, androecium, gynoecium, fruit

and seed). *fructuosus* (adj. A): fruitful, abounding in fruit.  
*frugifer* (adj. A): fruit-bearing.  
*Fruit*: *fructus* (s.m. IV), *gen. sing.* *fructus*, *abl. sing.* *fructu*, *nom. pl.* *fructus*, *gen. pl.* *fructuum*, *abl. pl.* *fructibus*; *frux* (s.f. III), *nom. pl.* *fruges*, is rarely used in bot. L., although in class. L. *fructus* seems to have referred chiefly to tree-fruits, as *frux* to those growing on the ground, as peas and beans, and *frumentum* to cereals, as wheat and barley, all basically meaning 'produce for enjoyment' from *fruor* 'enjoy'; *fructus nunc baccatus indehiscensque, nunc capsularis, supra medium circumscisse dehiscens pericarpii parte superiori decidua, vel septicide bivalvis, valvis integris bifidis*, fruit sometimes baccate and indehiscent, sometimes capsular, above the middle transversely dehiscent with the upper part of the pericarp deciduous, or septicidally 2-valved, with the valves entire or 2-fid; *fructus varius, superus vel plus minus inferus, nudus vel calycis tubo persistente inclusus, drupaceus pomaceus folicularis vel ex achaeniis drupis indefinitis toro sicco vel carnosus impositis compositus*, fruit varied, superior or more or less inferior, naked or by the persistent tube of the calyx covered, drupaceous pomaceous folicular or from achenes or drupes of indefinite number on a dry or fleshy torus placed made up.

*Fruit-body*: *fructificatio* (s.f. III. vi), *abl. sing.* *fructificatione*; *receptaculum* (s.n. II), *abl. sing.* *receptaculo*, *fructificatio resupinata, juvenilis tenuis citrino-viridis, maturitate subgelatinosa lutea*, fructification resupinate, when young thin citron-green, at maturity almost gelatinous.

*fruitful*: *fecundus* (adj. A), *fertilis* (adj. B), *fructuosus* (adj. A).  
*fruiting*: *fructifer* (adj. A), *frugifer* (adj. A), *fructificans* (part. B).

*Frustillum* (s.n. II): a small piece, a scrap; see *FRAGMENTUM*. *Frustum* (s.n. II): bit, piece.

*Frustule*: *frustulum* (s.n. II), *nom. pl.* *frustula*, *abl. pl.* *frustulis*; *frustula oblonga vel rectangularia in fascias conjuncta mox soluta et per isthnum angulis concatenata*, frustules oblong or rectangular in bands joined together soon free and linked through an isthmus by the angles.

*frutescens* (part. B): becoming shrubby. *Frutex* (s.m. III. i): shrub, bush. *fruticans* (part. B): becoming shrubby. *fruticosus* (adj. A): shrubby, bushy.

*fucatus* (part. A): painted, coloured, stained.  
*fuchsianus* (adj. A): fuchsine pink (H.C.C. 6.27).  
*fugax* (adj. B): fleeting, transitory, ephemeral; *floribus fugacibus*, with flowers quickly withering. 342  
*fulcien* (part. B), *fulcrans* (part. B): supporting, *fulcratus* (part. A): supported. *Fulerum* (s.m. II): prop, support (used by Linnaeus for subsidiary organs such as petioles, stipules, tendrils, prickles, bracts, pedicels).  
*fulgens* (part. B), *fulgidus* (adj. A): shining, bright-coloured.  
*fuligineus* (adj. A): dirty-brown, almost black, sooty. *fuliginosus* (adj. A): full of soot, sooty. *Fuligo* (s.f. III. vi): soot.  
*full*: *plenus* (adj. A), *repletus* (part. A), (*in some contexts*) *farctus* (part. A). *farctilis* (adj. B), *onustus* (adj. A), *solidus* (adj. A). *full-grown*: *adulatus* (part. A). *fully*: *plene* (adv.), *perfecte* (adv.), *admodum* (adv.).  
*fultus* (part. A): supported.  
*fulvescens* (adj. B): becoming tawny, somewhat tawny. *fulvi*, *fulvo*: *in L. comp.*, tawny, yellowish-brown; *fulvicaulis*, with tawny stem; *fulvinervis*, with tawny nerves; *fulvisericus*, silky with tawny hairs; *fulvispinus*, with tawny spines. *fulvidus* (adj. A): somewhat tawny. *fulvus* (adj. A): tawny, 'dull yellow with a mixture of grey and brown' (Lindley), yellowish-brown.  
*fumeus* (adj. A), *fumidus* (adj. A), *fumosus* (adj. A): smoky.  
*funalis* (adj. B): rope-like. 48  
*functioning*: *fungens* (part. B); *zoosporis velut isogametae fungentibus*, with zoospores functioning as if isogametes.  
*Fundamentum* (s.n. II): groundwork, basis.  
*Fundus* (s.m. II): the bottom of anything, base; *corolla fundo violaceo exceptio lutea*, corolla yellow except for the violet base.  
*funestus* (adj. A): causing death, deadly, fatal, killing.  
*fungal*: *fungalis* (adj. B). *Fungus*: *fungus* (s.m. II), *gen. sing.* *fungi*, *abl. sing.* *fungo*, *nom. pl.* *fungi*, *gen. pl.* *fungorum*, *abl. pl.* *fungis*; *sylloge fungorum omnium hucusque cognitorum*, summary of the fungi all thus far known, i.e. of all known fungi.  
*fungens* (part. B): functioning.  
*fungiformis* (adj. B), *fungilliformis* (adj. B): mushroom-shaped. 91  
*fungosus* (adj. A): spongy. The word *fungus*, orig. *sfungus*, is cognate with *spongia*, Gk. *σπόνγη*, sponge.

*Funicle*: *funiculus* (s.m. II), *abl. sing.* *funiculo*.  
*funicularis* (adj. B), *funiformis* (adj. B): rope-like, *funiculosus* (adj. A): occurring in ropes or bundles, rope-like. *Funiculus* (s.m. II): funicle, cord, slender rope. *Funis* (s.m. III): rope.  
*funnel-shaped*: *infundibuliformis* (adj. B), *infundibularis* (adj. B).  
*furca* (s.f. I): fork, q.v. *furcatus* (adj. A): forked, having two long terminal lobes. 233  
*furfuraceus* (adj. A): scurfy, covered with bran-like scales or powder.  
*furnished*: *see PROVIDED WITH*.  
*Furrow*: *sulcus* (s.m. II), *abl. sing.* *sulco*, *nom. pl.* *sulci*, *abl. pl.* *sulcis*; *sulci ampli, magnam valvae partem occupantes*, furrows big, a large part of the valve occupying. *furrowed*: *exaratus* (part. A), *sulcatus* (adj. A), *valleculatus* (adj. A); cf. *ALVEIFORMIS*, CHANNELLED.  
*Furunculus* (s.m. II): cystolith, raphid or sclereid (cf. *Taxon* 17:17; 1968).  
*furvus* (adj. A): dark, dusky, almost black.  
*fusca* (part. B): darkening. *fuscatus* (part. A): darkened.  
*fusci*, *fusco*: *in L. comp.*, dark or dark brown; *fusciflorus*, with dark brownish flowers.  
*fusca* (adj. A): a sombre brown, 'brown tinged with greyish or blackish' (Lindley), 'very dark blackish brown' (Dade), but often used to indicate darkness of colour.  
*fused*: *connatus* (part. A), *coalitus* (part. A), *conferruminatus* (part. A), *conjunctus* (part. A).  
*fusiformis* (adj. B): fusiform, swollen at middle and tapering to each end like a spindle, narrowly ellipsoid. 27  
*fusing*: *conjugens* (part. B), *coalescens* (part. B). *Fusion*: *conjunction* (s.f. III); *in locus conjunctionis*, at point of fusion.  
*future*: *futurus* (part. A).

G

*gal-*, *gala-*, *galacto-*: *in Gk. comp.*, milk, milky (referring either to milky colour or production of latex); *galanthus*, *galanthus*, with milk-white flowers; *galachrous*, milk-coloured; *see LACTI-, MILK-*.

*Galactose*: *galactosum* (s.n. II), *gen. sing.* *galactosi*.

*Galbulus*: *galbulus* (s.m. II), *abl. sing.* *galbulo*, *nom. pl.* *galbuli*, *abl. pl.* *galbulis*.

*galbus* (adj. A): yellow (*in this sense probably a loan-word from German*), smooth.

*Galea* (s.f. I): helmet, q.v. *galeatus* (adj. A): provided with a helmet. *galeiformis* (adj. B): helmet-shaped. *galericulatus* (adj. A): provided with a little helmet-like skull-cap or *galerum* (s.n. II).

*Gall*: *galla* (s.f. I), *lit.* 'oak-apple'. *gall-bearing*: *cecidophorus* (adj. A). *Galla* (s.f. I): gall, oak-apple.

*Gametangium*: *gametangium* (s.n. II), *abl. sing.* *gametangio*, *nom. pl.* *gametangia*, *abl. pl.* *gametangiis*; *gametangia ad nodos primarios et ad basim verticillorum posita*, *gametangia* at primary nodes and at base of whorls situated.

*Gamete*: *gameta* (s.f. I), *abl. sing.* *gameta*, *nom. pl.* *gametae*, *abl. pl.* *gametis*.

*gamo*: *in Gk. comp.*, united; *gamopetalus*, with petals united from base upwards; *gamophyllus*, with perigon segments likewise united; *gamosepalus*, with sepals likewise united.

*gangliiformis* (adj. B): knot-like. *Ganglion* (s.n. II): knot, swelling along stem. *ganglioneus* (adj. A): with knot-like swellings.

*gaping*: *hians* (part. B), *ringens* (part. B). *Garden*: *hortus* (s.m. II), *gen. sing.* *horti*; cf. *VIRIDARIUM*.

*gas*, *gaseous*: *gaseous* (adj. A); *vacuola gaseosa*, gas vacuole.

*gaudens* (part. B): rejoicing in, hence happily possessing.

*Gelatina* (s.f. I): jelly.

*Gelatinum* (s.n. II): gelatin.

*gelatinous*: *gelatinosus* (adj. A). 328

*gelatinus* (adj. A): jelly-like, jelly.

*gelatus* (part. A): frozen.

*gelineus* (adj. A): jelly-like, jelly.

*gemellus* (adj. A), *geminus* (adj. A): twin-born, paired. *geminatus* (part. A): made double, doubled, paired. 503

*Gemma* (s.f. I): bud, bud-like organ capable of reproducing the plant.

*Gemma-cup*: *scyphulus* (s.m. II).

*Gemmatio* (s.f. III): budding. *geminatus* (adj. A): provided with buds, budded. *gemmifer* (adj. A), *gemmiparus* (adj. A): bearing buds. *gemmiformis* (adj. B): bud-like. *-geminis* (adj. B), *-geminus* (adj. A): *in L. comp.*, -budded; *multigemmius*, many-budded.

*Gemmula* (s.f. I): ovule; *gemmae in loculis solitariae*, ovules in the loculi solitary. *geminulifer* (adj. A): ovule-bearing, ovule-bearing; *amenta gemmifera*, female catkins.

*general*: *generalis* (adj. B); *index abecedarius generalis*, general alphabetical index. generally, in general: *generalitatem* (adv.), *generaliter* (adv.), *plerumque* (adv.), *universus* (adv.), *in universum*.

**Generation**: *generatio* (s.f. III); cf. *MULTIPLICATION, PROPAGATION*.

**generic**: *genericus* (adj. A); *nomen genericum*, generic name; *nomina generica conservanda*, generic names to be kept; *propter semina deficiencia positio generica incerta*, on account of seeds wanting generic position uncertain; *see GENUS*.

**Generitypus** (s.m. II): generic type, type-species of the genus.

**genetic**: *geneticus* (adj. A). **genetically**: *genetice* (adv.).

**-genus** (adj. A): in *Gk. comp.*, of a particular kind; *homogeneous*, all of the same kind; cf. *GENUS*.

**geniculatus** (adj. A): geniculate, bent abruptly like a knee, *lit.* 'with bended knee'. *Geniculum* (s.n. II): node, joint.

**Genitalia** (s.n. pl. II): stamens and pistil, androecium and gynoecium, sexual organs; cf. *ORGAN*.

**genitus** (part. A): produced, born of, arising from; *hybrida a Viburno erubescens et V. henryi genita*, hybrid from Viburnum erubescens and V. henryi brought forth.

**Gens** (s.f. III. ix): race, clan, swarm; *gentes herbarum*, the kinds of herbs (or plants generally).

**gentianinus** (adj. A): gentian-blue (H.C.C. 42).

**gently**: leniter (adv.).

**genuflexus** (adj. A): bent like a knee; cf. *GENICULATUS*.

**genuinus** (adj. A): genuine, authentic, hence applied to type element of a species.

**Genus**: *genus* (s.n. III. iv), *gen. sing. generis*, *abl. sing. genere*, *nom. and acc. pl. genera*, *abl. pl. generibus*; *genus novum*, new genus; *pro genere*, as a genus; *genera autem tot sunt, quot attributa communia proxima distinctarum specierum secundum quae in primordio creatu fuere*: confirming haec revelata inventa observata; *hinc omnia genera naturalia sunt* (Linnaeus), there are as many genera as the common approximating attributes of distinct species according to which they were created in the beginning: revelation, discovery, observation confirm this; hence all genera are natural (Linnaeus); *punctis more generis*, with dots after the manner of the genus; *foliis pro genere parvis*, with leaves for the genus small; *revisio generis Achilleae*, revision of the genus Achillea; *generitypus est*, it is the type of the generic name.

**-genus** (adj. A): in *comp.*, born or produced in a certain place or condition;

*alpigenus*, alp-born, native of the Alps; *primigenus*, first produced.

**geographical**: *geographicus* (adj. A); *distributio geographicā*, geographical distribution.

**geotropus** (adj. A): turning towards the ground.

**-ger** (adj. A): in *L. comp.*, carrying, bearing; *ramus floriger*, flowering branch.

**geranius** (adj. A): geranium lake (H.C.C. 20).

**gerens** (part. B): carrying.

**Germen** (s.n. III. vi): ovary.

**germinalis** (adj. B): germ-; *filum germinale*, germ-thread.

**germinating**: *germinans* (part. B); *arbores littorales tropicae seminibus intra pericarpum cum stirpe matre cohaerens germinantibus et radices in terram agentibus singulares*, trees coastal tropical remarkable by the seeds within the pericarp attached to the mother plant germinating and roots into the earth driving. **Germination**: *germinatio* (s.f. III. vi), *gen. sing. germinationis*.

**gerontogaeus** (adj. A), **gerontogaeus** (adj. A): pertaining to the Old World; *species gerontogaia*, a species of the Old World; *species omnes gerontogaiae*, species all belonging to the Old World; cf. *NEO-*.

**-geton** (s.m. III): in *Gk. comp.*, neighbour, a dweller; *potamogeton*, river-neighbour; *aponogeton*, neighbour of Aponos (from Gk. *a* 'without', *ponos* 'trouble'), the healing springs of Bagni d'Abano.

**gibbosus** (adj. A), *gibbus* (adj. A): gibbos, more swollen in one place than another, with a pouch-like swelling, *lit.* 'hunch-backed'. 21 **giga-**, **gigant-**: in *Gk. comp.*, giant, very large; *gigalobius*, with very large pods; *gigantostachys*, with very large spikes. **giganteus** (adj. A): giant, gigantic, very large. *Gigas* (s.m. III): a giant. 341

**Gibba** (s.f. I): hump, swelling.

**gignens** (part. B): begetting, bringing forth.

**Gill**: *lamella* (s.f. I), *nom. pl. lamellae*, *abl. pl. lamellis*. As regards their attachment, following Josserand, *Descript. Champ. Supér. 237* (1952) especially, several types may be distinguished; *lamellae omnino liberae*, *basi stipitem non attingentes* (or *basi intervallo a stipite separatae*), gills entirely free, at base the stipe not reaching (or at base by a gap from the stipe separated), Fig. A; *lamellae liberae*, *basi attenuatae stipitem viz. attingentes*, gills free, at base narrow the stipe just reaching, Fig. B; *lamellae subliberae*, gills almost free, i.e. attached at base by only part

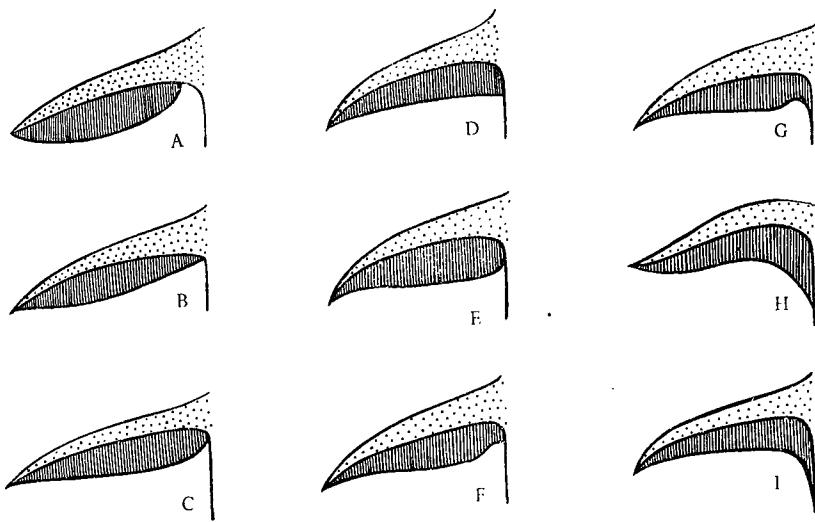


Fig. 35 Types of Attachment of Gill  
(After M. Josserand, *Description des Champignons supérieurs*; 1952)

of their width, Fig. C; *lamellae simpliciter adnatae*, gills simply adnate, i.e. attached at base to the stipe by their whole width, Fig. D; *lamellae basi adnatae rotundatae* (or *basi rotundato-adnatae*), gills at base rounded adnate, i.e. rounded and diminished in width before joining stipe, Fig. E; *lamellae basi adnatae emarginatae* (or *basi emarginato-adnatae*), gills at base adnate emarginate, i.e. diminished in width by a hollow curve before joining stipe, Fig. F; *lamellae uncinatae*, gills uncinate, i.e. with a notch before joining stem, Fig. G; *lamellae decurrentes*, gills decurrent, i.e. carried downwards on stipe, Fig. H, I; *lamellae angustissimae 3 mm. latae*, *basi rotundatae stipitique contiguae sed haud vero adnatae*, *ambitum versus attenuatae*, *albae*, *pileo candiores*, *acie acutae at non denticulatae*, *confertissimae*, gills very narrow 3 mm. broad, at base rounded and touching the stipe but not truly adnate, towards the circumference attenuate, white, than the pileus a more brilliant white, at the edge acute yet not denticulate, very close together; *lamellis subdistantibus tetradymis acute decurrentibus medio ventricosis antice attenuato-rotundatis albis angustissimis*, with gills somewhat distant tetradyms sharply decurrent at the middle swollen in the front (i.e. outside) attenuate-rounded white very narrow.

B.L.—P

**gilvus** (adj. A): dull yellow, yellowish tan, but also applied to reddish or greyish colours found on horses.

**Girdle**: *cingulum* (s.n. II), *abl. sing. cingulū*; *zona* (s.f. I), *abl. sing. zona*; *aspectu cingulari*, in girdle view.

**given**: *datus* (part. A), *donatus* (part. A). **giving forth**: *edens* (part. B), *emittens* (part. B).

**glabrate, glabrescent**: *glabratus* (adj. A) 'made nearly glabrous', *glabrescens* (part. B), 'becoming glabrous or nearly so', *glabriusculus* (adj. A), 'almost glabrous', *decalvatus* (part. A), 'become glabrous'. **glabrous**: *glaber* (adj. A), *glabellus* (adj. A); *herba omnino glabra*, herb entirely glabrous; *folium glabrum*, leaf glabrous; *herba monophylla folio glabro*, herb one-leaved with the leaf glabrous; *folia glabra*, leaves glabrous; *ramuli glabri tenues foliis glabris*, branchlets glabrous thin with leaves glabrous; *calyx glaber*, calyx glabrous. **glabrous**: in *L. comp.*, *glabri-*, in *Gk. comp.*, *psilo-*; *psilandrus*, with glabrous stamens; *glabriflorus*, *psilanths*, with glabrous flowers; *glabripetalus*, with glabrous petals; *glabrispiculus*, with glabrous spikelets; **Glabrous state**: *glabritia* (s.f. I). 295.

**glacialis** (adj. B): frozen, glacial.

**Gland**: *glans* (s.f. III. ii), *abl. sing. glande*, *nom. pl. glandes*, *abl. pl. glandibus*, *lit. acorn*; *glandula* (s.f. I), *abl. sing. glandula*, *nom. pl. glandulæ*, *abl. pl. glandulis*.

glandulis. Despite past inconsistency and also the use, which is historically correct, of the term *glans* for an acorn or similar fruit and of *glandula* for the rostellar gland of Orchidaceae, it would seem best to apply *glans* to a secretory area or mass and the diminutive *glandula* to a single secretory cell or a few-celled isolated very small secretory organ; the use of the term *glans* for swellings without secretory functions should now be avoided; *glans hemisphaerica viscida viridis vel lutea*, gland hemispherical sticky green or yellow; *glande viridi vel lutea*, with gland green or yellow; *glandibus geminatis viridibus vel luteis*, with glands paired green or yellow; *glandula sessilis sphaerica unicellularis minuta impleta succo viscido ochroleuco vel incolorato*, gland sessile spherical one-celled minute filled with juice sticky yellowish white or colourless; *colleterae constant ex singulis glandulis terminantibus cellulas uniseriales cylindraceas*, colleters (mucilaginous hairs) are made up from solitary glands terminating cylindric cells in one series; *bracteae ut et rhachis inflorescentia pedicellique glandulis longiuscule stipitatis dense obsitae*, bracts as also the rachis of the inflorescence and the pedicels with glands rather long stalked densely covered. *gland-bearing, glandular*: *glandifer* (adj. A), *glandulifer* (adj. A), *glandulosus* (adj. A); *colleterae a phytographis 'pili glanduliferi' nominatae sunt*, colleters by plant-describers 'hairs glandule-bearing' are named; *calyx extus glandulosus*, calyx on the outside glandular; *folia utrinque glandulosa*, leaves on both sides glandular. *glandless*: *eglandulatus* (adj. A), *eglandulosus* (adj. A), *glandibus desitutus* (adj. A), *sine glandibus*.

*Glandule*: *glandula* (s.f. I); *see GLAND*.  
*Glans* (s.f. III. ii): gland (secretory organ), swelling or appendage resembling a gland in appearance, nut (one-seeded dry indehiscent fruit with hard pericarp) borne in a cupule as an acorn, beech-mast, sweet chestnut, etc.

*Glara* (s.f. I): scree, q.v.

*Glarea* (s.f. I): gravel, shingle.

*glareous* (adj. A): pertaining to gravel.

*Glass*: *vitrum* (s.n. II). *glassy*: *vitreus* (adj. A).

*Glasshouse*: *see GREENHOUSE*.

*Glaucescence*: *glaucedo* (s.f. III); *species foliorum glaucedine insignis*, species notable for the glaucous condition of the leaves. *glaucescens*: *glaucescens* (adj. B). *glaucous*: *glaucus* (adj. A).

*glaucous*: *in L. comp. usu. glauci, in Gk. comp. glauco-*; *glaucifolius, glaucophyllus*, glaucous-leaved; *glaucifolius*, with leaves of sea poppy (*Glaucium*); *glaucocarpus*, glaucous-fruited. 307 *gleaming*: *fulgens* (part. B), *fulgidus* (adj. A), *micans* (part. B), *nitens* (part. B), *nitidus* (adj. A), *lucidus* (adj. A). *Gleba*: *gleba* (s.f. I), *abl. sing. gleba*; *gleba pluricellulosa a peridio non separabilis candida immutabilis lactiflua demum farinacea*, gleba (sporing tissue) many-celled from the peridium not separable pure white unchanging milky at length floury. *glebosus* (adj. A): full of clods, lumpy. *Glebula*: *glebula* (s.f. I), *abl. sing. glebula*. *glebulous* (adj. A): *glebulose*, with rounded elevations. *Gleocystidium*: *gleocystidium* (s.n. II). *glistening*: *lucens* (part. B); *see GLOSSY*. *glob-, globi-*: *in L. comp.*, ball-like, globose; *globifer, globiger*, globe-carrying, i.e. with a spherical organ. *globosus* (adj. A): round like a ball, globose, spherical. *globularis* (adj. B), *globulifer* (adj. A), *globulosus* (adj. A): *globule-bearing, globular, globuliformis* (adj. B): button-like. *Globulus* (s.m. II): a little ball, globule. *Globus* (s.m. II): a round body, ball, globe, sphere. 4 *Glochid*: *glochin* (s.f. III. ii), *abl. sing. glochide, nom. pl. glochides, abl. pl. glochidibus*, lit. 'projecting part, barb of arrow'; *glochidium* (s.n. II), *abl. sing. glochidio, nom. pl. glochidia, abl. pl. glochidiis*. *glochideus* (adj. A), *glochidiatus* (adj. A): *glochidiate, provided with barbs*. *gloeo-*: *in Gk. comp.*, glue-, sticky; *gloecalyx*, with a viscous calyx. *gloeo-carpus* (adj. A): having the reproductive organs enveloped in mucus. *Gleocystidium* (s.n. II): *gleocystidium*. *Glole*: *glomus* (s.n. III. iv), *abl. sing. glomere, nom. pl. glomera, abl. pl. glomeribus*, lit. 'ball of yarn', etc. *glomeratus* (part. A): collected closely together into a head. *glomerulatus* (adj. A): provided with glomerules. *Glomerule*: *glomerulus* (s.m. II), *abl. sing. glomerulo, nom. pl. glomeruli, abl. pl. glomerulis*; *glomeruli florum inferiores remoti, superiores approximati, omnes folio suffulti*, glomerules (clusters of capitula with an involucre) of flowers lower remote, upper close together, all by a leaf subtended. *Glossiness*: *nitor* (s.m. III). *glosso-*: *in Gk. comp.*, tongue-; *glossophyllus*, with tongue-shaped leaves. *Glossologia* (s.f. I): terminology.

*glossy*: *nitidus* (adj. A), *politus* (part. A), *inunctus* (part. A); *see GLEAMING, GLISTENING, POLISHED*.

*Glucose*: *glucosum* (s.n. II), *gen. sing. glucosi*.

*Glue*: *glutinium* (s.m. II), *ichthyocolla* (s.f. I), *glued to*: *agglutinatus* (part. A), *adglutinatus* (part. A), *glued together*: *conglutinatus* (part. A).

*glumaceous* (adj. A): *glumaceous, like the glumes of grasses*. *Glume*: *gluma* (s.f. I), *abl. sing. gluma, nom. pl. glumae, abl. pl. glumis*; *glumae aequales similes concavae uninerves dorso rotundatae vel carinatae, primo erectae tandem divergentes*, glumes equal alike concave one-nerved on the back rounded or keeled, at first erect at length divergent.

*glutinous*: *glutinosus* (adj. A), *viscidus* (adj. A); *cf. GLOEO-*. 300

*glyco-*: *in Gk. comp.*, sweet of taste or smell; *glycosum*, sweet-smelling.

*glypto-*: *in Gk. comp.*, cut into.

*going forth*: *exiens* (part. B).

*golden-yellow*: *aureus* (adj. A), *auratus* (adj. A) 'ornamented with gold'; *in L. comp.*, *aurei, aureo, auri*, *in Gk. comp.*, *chrys-, chryso-*; *aureiflorus, chrysanthus*, golden-flowered; *auricolor, chrysochromus*, gold-coloured; *aureolabris, chrysophilus*, with golden lip.

*-gone* (s.f. I), *-gonium* (s.n. II): *in Gk. comp.*, reproductive organs.

*gongylodes* (adj. A): *knob-like*. 62

*goni-, gonia-*: *in Gk. comp.*, angled, angular; *goniocalyx*, with angled calyx; *goniocarpus*, with angled fruits; *goniospermus*, with angled seeds.

*Gonidium*: *gonidium* (s.n. II).

*Gonimoblast*: *gonimoblastus* (s.m. II).

*Gorge*: *fauces* (s.f. III. i, pl.), *abl. pl. faucibus*; *in faucibus crescens*, in the gorge(s) growing.

*gossypinus* (adj. A): cottony, q.v.

*governed*: *gubernatus* (part. A).

*gracilis* (adj. B): thin, slender.

*gradatim* (adv.): little by little, gradually.

*gradually*: *gradatim* (adv.), *paulatim* (adv.), *sensim* (adv.), *leniter* (adv.).

*Graft* (scion): *insitum* (s.n. II). *grafted*: *insiticus* (adj. A), *insititus* (adj. A).

*Grain*: *granum* (s.n. II); *granum paramylaceum, paramylon grain*; *cf. POLLEN*.

*gralliformis* (adj. B): *stilt-like*; *radices gralliformes*, stilt-roots.

*Gramen* (s.n. III. vi): *grass, q.v. gramineus* (adj. A): *grassy, grass-like*. *graminifolius* (adj. A): *grass-leaved*.

*graminatus* (adj. A): *striped with raised lines*.

*grandi-*: *in L. comp.*, large, big; *grandi-*

*florus*, large-flowered, *grandis* (adj. B): large, great, big, tall, lofty.

*granular, granulate, granulose*: *granularis* (adj. B), *granulatus* (adj. A), *granulosus* (adj. A). Indiscriminate use has made these terms virtually interchangeable; to the earlier authors *granulatus* meant 'consisting of many little knobs attached by small strings, as in the *Saxifraga granulata*' (Berkenhout, 1799). *Granule*: *granulum* (s.n. II), *abl. sing. granul*, *nom. pl. granula, abl. pl. granulis*; *granulis distinctissimis aequidistantibus et aequimagnis polygonis vel quadraticis papillosis*, with granules most distinct (all) at the same distance apart and of the same size many-angled or quadrate papillose; *granulis margaritaceis usque ad semi-radium subaequalibus dein majoribus demumque ad marginem decrescentibus*, with granules pearly to half-radius almost equal thereafter bigger and finally at the margin diminishing. 236

*Granum* (s.n. II): *grain*; *see POLLEN*.

*Grape* (fruit): *uva* (s.f. I). *grape-bearing*: *uifer* (adj. A). like a cluster of grapes: *botryoideus* (adj. A), *uvarius* (adj. A).

*grasping*: *prehendens* (part. B), *prehensilis* (adj. B).

*Grass*: *gramen* (s.n. III. vi), *gen. sing. graminis*, *abl. sing. gramine, nom. pl. gramina, gen. pl. graminum, abl. pl. graminibus*; *gramen perenne multi-caule caespitosum gracile, inflorescentia inclusa 10-20 cm. altum*, grass many-stemmed tufted slender, with inflorescence included 10-20 cm. high; *gramina perennia vel annua, nunc elata ramosa nunc humilia caespitosa, basi saepe decumbentia interdum bulboso-increassata, foliis planis mollibus vel setaceis rigidis*, grasses perennial or annual, now tall branched now dwarf tufted, at base often decumbent sometimes bulbously thickened, with leaves flat soft or setaceous rigid; *descriptions et icones graminum*, descriptions and illustrations of grasses; *de graminibus*, concerning grasses. *grass-*: *in L. comp.*, *gramini-*, *in Gk. comp.*, *agrosto-*; *agrostologia*, agrostology, the study of grasses; *graminifolius, agrostophyllus*, grass-leaved; *graminiformis*, grass-like. *grassy*: *gramineus* (adj. A).

*gratus* (adj. A): pleasing, agreeable.

*Gravel*: *glarea* (s.f. I). *gravelly*: *glareous* (adj. A).

*graveolens* (adj. B): strong-smelling.

*gravis* (adj. B): heavy, weighty.

*gray*: *see GREY*.  
*greasy*: *sebosus* (adj. A), *unctus* (part. A).

great: magnus (adj. A), amplus (adj. A). great as: tantus quantus (adj. A). greatly: magnopere (adv.), multum (adv.). green: viridis (adj. B); *folia atro-viridia vittis pallide viridibus vel etiam albidis secus venas currentibus notata*, leaves dark green marked with bands pale green or even whitish along the veins running; *ovarium viride*, ovary green. green-: in *L. comp.*, viridi, in *Gk. comp.*, chlor, chloro-; *viridi-albus*, *chloroleucus*, greenish-white; *viridiflorus*, *chloranthus*, green-flowered; *viridipes*, *chloropodus*, with a green stalk. bluish-green: *venetus* (adj. A). deep-green: *atrovirens* (adj. B), *perviridis* (adj. B). emerald-green: *smaragdinus* (adj. A). greenish: *virellus* (adj. A), *viridulus* (adj. A), prefix *viridi-*, e.g. *viridi-flavus*, greenish-yellow. leek-green: *porraceus* (adj. A), *prasinus* (adj. A). malachite-green: *malachiteus* (adj. A). olive-green: *olivaceus* (adj. A). pea-green: *pisinus* (adj. A). sea-green: *glaucus* (adj. A). yellowish-green: *flavo-virens* (adj. B), *chlorinus* (adj. A). uranium-green: *luteoviridis* (adj. B); see *VIRIDIS*.

Greenhouse: *caldarium* (s.n. II) 'hot-house', *tepidarium* (s.n. II) 'warm house', *frigidarium* (s.n. II) 'cool house', *hibernaculum* (s.n. II). gregarius (adj. A): gregarious, growing in company but not united or matted together. gregatim (adv.): in clusters.

Grex (s.m. or f. III. i): flock, herd, drove, swarm, hence a group of species or hybrids; *grex hybrida polymorpha hortensis*, hybrid-swarm polymorphic belonging to gardens.

grey: *canus* (adj. A), *cinereus* (adj. A), *cineraceus* (adj. A), *griseus* (adj. A), *schistaceus* (adj. A). grey-: in *Gk. comp.*, *polio-*, *spod-*, *spodo-*, *tephro-*, in *L. comp.*, *cano-*, *cinereo-*. greyish: *cinerascens* (part. B), *ravidus* (adj. A).

griseus (adj. A): grey, pearl-grey, pure grey a little verging to blue.

Groove: *sulcus* (s.m. II), *abl. sing.* *sulco*; *putamen a ventre sulvo lato profundo in longitudinem exaratum*, stone on the ventral side by a furrow broad deep lengthwise ploughed out.

grooved: *sulcatus* (adj. A), *canaliculatus* (adj. A); cf. CHANNELLED, ENGRAVED, FURROWED.

grosse (adv.): coarsely, larger than usual. grossus (adj. A): thick, coarse.

Ground: *terra* (s.f. I); cf. SOIL.

Group: *turma* (s.f. I), *grex* (s.m. or f. III. i), *caterva* (s.f. I). grouped: *aggregatus* (part. A), *dispositus* (part. A); *cellulae*

*binae quaternaeque aggregatae*, cells in groups of two and four. growing: *crescens* (part. B). grumosus (adj. A): broken into grains or small tubercles. gubernatus (part. A): governed, controlled, managed. Gum: *gummi* (s.f. indecl.). gummy: *gummosus* (adj. A). Gustus (s.m. IV): taste, flavour. Gutta (s.f. I): a drop of fluid, oil-droplet in spores or hyphae of fungi. guttatus (adj. A): spotted. *Guttula* (s.f. I): oil-droplet in fungus. guttulatus (adj. A): guttulate, provided or apparently sprinkled with dots of oil or resin. gymno-: in *Gk. comp.*, naked. *gymnocarpus* (adj. A): with the fruit naked, i.e. without perianth, hairs, mucus (e.g. in Charophytes) or some other covering. *gymnostomaticus* (adj. A): *gymnostomous*. gyn-, gyno-: in *Gk. comp.*, female or pertaining to female organs. *Gynandrium*: *gynandrium* (s.n. II), *abl. sing.* *gynandro*. *Gynobase*: *gynobasis* (s.f. III); see BASIS. *gynobasic*: *gynobasicus* (adj. A). *gynodynamous*: *gynodynamicus* (adj. A), *gynodynamus* (adj. A). *Gynoecium*: *gynoecium* (s.n. II), *abl. sing.* *gynoecio*; *pistillum* (s.n. II), *abl. sing.* *pistillo*. *Gynophore*: *gynophorum* (s.n. II), *abl. sing.* *gynophoro*. *Gynostegium*: *gynostegium* (s.n. II), *abl. sing.* *gynostegio*; *gynostegium sessile* 2 mm. *altum*, *gynostegium sessile* 2 mm. *high*; *caput gynostegii convexum semiglobosum rostro brevi vix 1 mm. longo alte bifido ornatum*, head of the gynostegium convex hemispherical ornamented with a beak short scarcely 1 mm. long deeply bifid. *gypseus* (adj. A): gypsum-like. *Gypsum* (s.n. II): gypsum. *Gyroma* (s.n. III): annulus of ferns. *gyrus* (adj. A): curved backwards and forwards in turn, spiral. *Gyrus* (s.m. II): circle, ring, annulus.

## H

habitat: 'it grows'. *Habitatio* (s.f. III. vi): place of growth; usually the place of growth is associated with the verb *cresco* 'grow' or *habito* 'have possession of, inhabit, dwell' in the 3rd pers. sing. pres. active (*crescit, habitat*); *regiones temperatas, rarius calidas, totius orbis terrarum habitat*, regions temperate, more rarely hot, of the whole world it inhabits; cf. SOLUM.

*Habitus* (s.m. IV): condition, appearance, posture, nature, habit, manner of growth; see APPEARANCE. *habitus* (part. A): well-conditioned, fleshy, corpulent.

hactenus (adv.): thus far, until now. haec (dem. pron.): this, she, these.

haem-, haemat-: in *Gk. comp.*, blood-red; *haemanthus*, with blood-red flower; *haematoxarpus*, with blood-red fruit; *haematocephalus*, with blood-red head; *haematochrous*, blood-coloured; *haematoslasius*, woolly with blood-red hairs; *haemophyllus*, with blood-red leaves; *haematospermus*, with blood-red seeds; *haemastostachys*, with blood-red spike.

*Haematochrome*: *haematochroma* (s.n. III).

haerens (part. B): adhering, clinging, remaining, attached.

Hair: *pilus* (s.m. II), *nom. pl.* *pili*, *abl. pl.* *pilis*; *trichoma* (s.n. III); *nom. pl.* *trichomata*, *abl. pl.* *trichomatibus*. As to direction, a hair (pilus) may be *erect* (erectus, part. A) or *spreading* (patulus, adj. A), *leaning* (inclinatus, part. A), *bent forwards* (pronus, adj. A), *bent back* (resupinus, adj. A), *appressed* (appressus, part. A); as to texture, *soft* (mollis, adj. B), *stiff* (rigidus, adj. A), *harsh* (asper, adj. A); as to form, *simple* (simplex; adj. B), *straight* (rectus, adj. A), *twisted* (tortus, part. A), *curled* (crispus, crispatus, adj. A), *curved* (curvus, curvatus, part. A), *flexuose* (flexuosus, adj. A), *unicellular* (unicellularis, adj. B), *multicellular* (multicellularis, adj. B), *moniliform*, like a string of beads (moniliformis, adj. B), *club-shaped* (clavatus, adj. A), *hooked* (uncatus, uncinatus, adj. A), *barbed* (glochideus, glochidiatus, adj. A), *branched* (ramosus, adj. A), *forked* (furcatus, adj. A), *feathery* (plumosus, adj. A), *stellate* (stellatus, adj. A), *sessile* (sessilis, adj. B), *stalked* (stipitatus, adj. A), *glandular* (glandulifer, adj. A), etc. They may be *sparse* (pili sparsi), *bunched together* (fasciculati), *dense* (densi), etc.; *folia pilis molibus sparsis vestita*, leaves with soft sparse hairs clothed; *corollae tubus introrsum medio circulo pilorum ornatus*, supra et infra hunc circulum saepissime pilis minutis conspersus, tube of the corolla on the inside at the middle with a circle of hairs adorned, above and below this circle most often with minute hairs sprinkled; *trichomata, quae caulem et folia vestiunt*, hairs, which clothe stem and leaves; *folia margine pilis abis longiusculis multicellularibus induta*,

leaves at the margin with white rather long multicellular hairs furnished; *utrinque pilis adpressis malpighiaceis hic illic nonnunquam satis regulariter conspersa*, on both surfaces with hairs appressed malpighiaceous here and there sometimes fairly regularly sprinkled; *calyx pilis longis teneris rectis pellucidis apice glandulosis quibus nonnullae setae rigidae intermixtae sunt*, calyx with hairs long thin straight transparent at the tip glandular, with which some bristles rigid intermixed are; *planta pilis eglanduligeris omnino destituta*, *pilis glanduligeris tantum obsita*, plant entirely lacking eglandular hairs, with gland-bearing hairs alone covered.

*Hair-covering*: indumentum (s.n. II), *gen. sing.* *indumenti*, *abl. sing.* *indumento*; *hirsuties* (s.f. V), *gen. sing.* *hirsuties*, *abl. sing.* *hirsutie*; *crinis* (s.m. III), *gen. sing.* *crinis*, *abl. sing.* *crine*, rarely used. *hair-like*: *capillaceus* (adj. A), *capillaris* (adj. B), *capilliformis* (adj. B), *trichoides* (adj. A); cf. THREADLIKE. *hairy*: see CILIATUS, HIRSUTUS, HIRTUS, HISPIDUS, INCANUS, LANATUS, PILIFER, PILOSUS, PUBENS, PUBESCENTS, STRIGOSUS, TOMENTOSUS, TRICH-, VELUTINUS, VILLOSUS. 270-287

*Half* (s.): *dimidium* (s.n. II), *abl. sing.* *dimidio*; *fissura ad dimidium radii attingens*, fissure reaching down to half of the radius; in *dimidio inferiore*, on the lower half; *sori dimidium distale obducentes*, sori covering the distal half. *half* (adj.): *dimidius* (adj. A). *half*: in *L. comp.*, semi-, in *Gk. comp.*, hemi-; *hemisphaericus*, *semiorbicularis*, hemispherical; *hemipterus*, *semialatus*, half-winged; *hemicyptus*, *semiocellatus*, half-hidden.

*Halipedum* (s.n. II): a plain by the sea.

*halo-*: in *Gk. comp.*, salt; *halophilus*, salt-loving.

*halonatus* (adj. A): surrounded by an outer circle, from *halos* (s.f.) 'halo, circle around the sun or moon'.

*halved*: *dimidiatus* (part. A); *cellulae magnitudine dimidiata*, cells half the size. 16, 138

*hamatus* (adj. A): barbed, hooked at the tip. *hamosus* (adj. A): hooked. *hamulatus* (adj. A), *hamulosus* (adj. A): armed with small hooks. *Hamulus* (s.m. II): small hook, barb. *Hamus* (s.m. II): hook, barb.

*hanging down*: *dependens* (part. B), *pendens* (part. B), *pendulus* (adj. A), *pendulinus* (adj. A), *dependulus* (adj. A). 394

hapalo-: in *Gk. comp.*, soft-; *hapalo-phyllus*, soft-leaved.

hapaxanthus (adj. A): having a single flowering period, then dying; cf. MONOCARPUS. 342

haplo-: in *Gk. comp.*, single-; *haplo-caulis*, single-stemmed. *haplostephanus* (adj. A): (in *Charophyta*) having a single circle of stipules at the base of each whorl of branchlets. *haplostichus* (adj. A): with a single row.

Hapteron: *hapteron* (s.n. II).

Haptomena: *haptomena* (s.n. III. xi); cf. p. 161.

hard: *durus* (adj. A). hardened: *induratus* (part. A). hardening: *indurescens* (part. B).

hardly: *vix* (adv.), *aegre* (adv.).

Hardness: *duritia* (s.f. I).

harmful: *noxius* (adj. A).

hastatus (adj. A): hastate, i.e. with equal more or less triangular basal lobes directed outwards. *hasti-*: in *L. comp.*, spear-; *hastifer*, *hastiger*, spear-bearing; *hastifolius*, spear-leaved; *hastilabius*, with spear-like lip; *hastipetalus*, with spear-like petals. *hastilis* (adj. B): spear-shaped. 127, 170

Hastula (s.f. I): terminal part of petiole of palms, also called a ligule, *lit.* 'a little spear'; cf. *Gentes Herb.*, 7: 179 (1946).

haud (adv.): not at all, by no means; used with adv., verbs and adj. *haud-quaquam* (adv.): by no means whatever.

Haustorium: *haustorium* (s.n. II); *fruticulus parasiticus caulis volubilibus haustorii affixis*, shrublet parasitic with stems twining by haustoria attached.

hazel-coloured: *avellaneus* (adj. A).

Head: *capitulum* (s.n. II), *acc. sing.* *capitulum*, *abl. sing.* *capitulo*, *nom. and acc. pl.* *capitula*, *abl. pl.* *capitulis*; *flores in capitulum globosum aggregati*, flowers in head globose crowded together; *capitulum magnum terminale 3 cm. latum*, head large terminal 3 cm. broad; *capitula homogama discoidea terminalia*, capitula homogamous with disc-florets terminal; *capitula heterogama radiata nutantia parva mediocriavate magna ad apices ramorum solitariae in axillis superioribus pedunculata*, capitula heterogamous rayed nodding small medium-sized or large at tips of branches solitary or in upper axils peduncled.

head-: in *L. comp.*, *capit-*, *capiti-*, in *Gk. comp.*, *cephal-*, *cephalo-*. -headed: in *L. comp.*, -*ceps*, in *Gk. comp.*, -*cephalus*.

heaped: *acervatus* (part. A).

Heart: *cor* (s.n. III. ii); *folia obtusata forma fere cordis humani*, leaves blunt

with the shape almost of the human heart.

heart-shaped: (at base with two rounded lobes) *cordatus* (adj. A), (in general form) *cordiformis* (adj. B); in *L. comp.*, *cordi*, in *Gk. comp.*, *cardio-*; *cordifer*, *cardiophorus*, heart-carrying, i.e. with a heart-shaped structure of some kind. 122

heavy: *gravis* (adj. B), 'weighty', *densus* (adj. A), 'thick', *ponderosus* (adj. A), 'heavy'.

hebdomalis (adj. B): weekly. *Hebdomas* (s.f. III): week.

hebetatus (part. A): dimmed, with the brightness taken off, matt, blunted.

hecat- hecto-: in *Gk. comp.*, hundred-.

Hedge: *sepes* (s.f. III. viii), *gen. sing.* *sepis*, *nom. pl.* *sepes*, *gen. pl.* *sepium*. In class. L. also *saepes*.

hedy-: in *Gk. comp.*, sweet; *hedyosmus*, sweet scented.

Height: *altitudo* (s.f. III): *ad altitudinem medium*, at mid height.

heleo-, helo-: in *Gk. comp.*, marsh; *helodes* (often wrongly transcribed as *elodes*), growing in marshy places; *helodoxa*, glory of the marsh.

helic-: in *Gk.* and *L. comp.*, coiled, spirally twisted; *helicantherus*, with twisted anthers. *Heliconia* and derivatives, such as *heliconifolius*, *heliconioides*, *heliconiopsis*, refer however to Mt. Helikon in Greece.

helicite (adv.): clockwise, in a direction passing from right to left when seen from the outside, sinistrorse (in the sense of Eichler, A. Gray, etc.), dextrorse (in the sense of de Candolle, etc.); cf. ANTHELICITE, TWINING.

heliotrope-coloured: *heliotropinus* (adj. A) (H.C.C. 6.36).

Helmet: *cassis* (s.f. III. iii), *gen. sing.* *cassidis*, *abl. sing.* *casside* (used for the upper hooded sepal of *Aconitum*); *galea* (s.f. I), *gen. sing.* *galeae*, *abl. sing.* *galea* (used for hooded upper lip of corolla of *Pedicularis*, etc.). In class. L. *cassis* denoted usually a metal helmet, *galea* a leather one; *cassis ascendens* (haud *horizontalis*) *valde incurva longirostris 3 cm. lata*, *apice inflata*, helmet ascending (never horizontal) strongly incurved long-beaked 3 cm. broad, at the tip inflated; *cassidis symmetricae margo inferior horizontalis recta*, of the symmetrical helmet the lower margin horizontal straight; *galea purpurea in rostrum praelongum angustum primo contortum apice truncatum attenuata*, helmet purple into a beak very long narrow at first twisted at the tip truncate drawn out; *corolla galeae rostro*

*linearis proboscideo contorto apice truncato*, corolla with the beak of the helmet linear proboscis-like twisted at the tip truncate; *galeae pars verticalis c. 6 mm. longa leviter reflexa margine breviter bidentata*, pars antherigera 10 mm. longa apice sensim in rostrum breve conicum attenuata, of the helmet the vertical part about 6 mm. long lightly reflexed at the margin shortly two-toothed, the anther-bearing part 10 mm. long at the tip gradually into a beak short conical drawn out. *helmet-shaped*: *galeiformis* (adj. B), *cassideus* (adj. A).

*helvus* (adj. A): light bay, pale red, 'the dingy colour of oxen' (H. A. Dade).

hem-: in *Gk. comp.*, half-; *hemicryptus*, half-hidden; *hemipterus*, half-winged; *hemisphaericus*, hemispherical.

**Hemisphere**: *hemisphaerium* (s.n. II): *in regionibus intertropicis utriusque hemisphaeril*, in intertropical regions of each hemisphere.

hence: *hinc* (adv.), *igitur* (adv.), *quamobrem* (adv.).

**hendeca-**: in *Gk. comp.*, eleven-; see ELEVEN-.

**hepaticus** (adj. A): liver-coloured, dark reddish-brown.

**hepta-**: in *Gk. comp.*, seven-; *heptadactylus*, with 7 digitately arranged finger-like lobes; *heptagynus*, with 7 styles or carpels; *heptamerus*, with parts in sevens; *heptanthus*, 7-flowered; *heptapetalus*, 7-petalled; *heptaphyllus*, with 7 leaves or leaflets; see SEPTEM-, SEVEN-.

**Herb**: *herba* (s.f. I); *herbae annuae vel perennes erectae vel repentes, glabrae*, herbs annual or perennial, erect or creeping, glabrous.

**herbaceous** (adj. A): herbaceous, i.e. grass-green or yellow-green in colour, or green and slightly fleshy, as opposed to faded, colourless and dry, particularly with reference to bracts, or with annual usually juicy stems as opposed to perennial woody stems. 334

**Herbarium**: *herbarium* (s.n. II), *gen. sing.* *herbarii*, *abl. sing.* *herbario*; *herbarium normale*, standard herbarium; *ex Herbario Musei Britannici*, from the Herbarium of the British Museum; *revisio lichenum in herbario Linnaei asservatorum*, revision of lichens in herbarium of Linnaeus preserved; *synonymia muscorum Herbarii Linnaeani*, synonymy of mosses of Linnaean Herbarium; cf. DRIED, EXSICCATA, EXSICCATUM, HORTUS.

**herbidus** (adj. A): rich in herbs, grass-green. **Herbula** (s.f. I): a little herb.

**here**: *hic* (adv.). **here and there**: disperse

(adv.), dispersim (adv.), *hic illuc* (adv.), *passim* (adv.). **hereafter**: *posthac* (adv.).

**hermaphrodite**: *hermaphroditus* (adj. A), *bisexualis* (adj. B); *flores hermaphroditici unisexuales vel polygami*, flowers hermaphrodite unisexual or polygamous.

**Hesitation** (s.f. III): hesitation; *haud sine hesitatione a sequente separavi*, not without hesitation have I separated it from the following.

**hetero-**: in *Gk. comp.*, different, other, uneven; *heterocarpus*, producing different colours; *heterogamus*, bearing two or more kinds of flowers (e.g. neuter, or unisexual, and bisexual) in one cluster; *heteromerus*, *heteromericus*, not corresponding in number; *heteromorphus*, diverging from usual structure, having organs of varying form or length; *heterophyllus*, having leaves of more than one form; *heterosporus*, having two kinds or sizes of spores; *heterotrichus*, having hairs of more than one kind or length. Similar *Gk. comp.* but of contrary meaning are formed with *homo*-, alike, similar, agreeing.

**Heterocyst**: *heterocysta* (s.f. I), *gen. sing.* *heterocystae*, *abl. sing.* *heterocysta*, *nom. pl.* *heterocystae*, *gen. pl.* *heterocystarum*, *abl. pl.* *heterocysts*; *heterocystae ad basim pseudo-ramorum nullae*. heterocysts at base of pseudo-branches none; *heterocystae basilares*, in *unica specie intercalares*, heterocysts basal, in one species between the apex and the base; *heterocystis intercalaris vel basalibus sphaericis vel ovalibus 6  $\mu$  longis 8  $\mu$  crassis*, with heterocysts intercalary or basal spherical or oval 6  $\mu$  long 8  $\mu$  thick; *sporae ab heterocystis remota*, spores distant from heterocysts; *sporae heterocystis contingae*, spores adjacent to heterocysts.

**heterogeneous** (adj. A): heterogeneous, not uniform in structure. **heteroicus** (adj. A): heterococious, with stages of development on different hosts, with more than one form of inflorescence in the same species. **heteromorphus** (adj. A): heteromorphic, having organs of varying form or length, (in *Charophyta*) with sterile and fertile whorls dissimilar.

**heterostylus** (adj. A): heterostylous, i.e. with styles of different length in individuals of the same species and the stamens correlatedly varying in length or position; *planta heterostyla*, *androdynamica a gynodynamica nisi stylo abbreviato et filamentis exsertis vix diversa*, plant heterostylous, the androdynamous one from the gynodynamous except for the abbreviated style and exerted filaments scarcely different;

*flores heterostyli, stylo in flore dolicho-stylo 4 mm. longo, in flore brachystylo 1 mm. longo, flowers heterostylous, with the style in a long-styled flower 4 mm. long, in a short-styled flower 1 mm. long.*  
*hexa-: in Gk. comp., six; hexandrus, hexastemonous, 6-stamened; hexagynous with 6 styles or carpels; hexamerous, with parts in sixes; hexapetalous, 6-petaled; hexapyrenous, with 6 pyrenes; hexasepalous, 6-sepaled; hexaspermous, 6-seeded; hexastachys, hexastachyous, 6-spiked; see SEX-, SIX-.*  
*hexagonal: hexagonous (adj. A), sexangularis (adj. B).*  
*Hexapodium (s.n. II): fathom, toise.*  
*hians (part. B): gaping, open-mouthed.*  
*Hibernaculum (s.n. II): winter-bud, glass-house. hibernus (adj. A): belonging to winter, wintry; cf. HEMALIS.*  
*Hibrida: see HYBRID.*  
*hic (adv.): in this place, here; hic illuc, here and there, sporadically; hic inde, locally.*  
*hic (dem. pron. m.), haec (dem. pron. f.), hoc (dem. pron. n.): this, he, she, it.*  
*hidden: occultus (part. A), celatus (part. A); see CONCEALED. hiding: occultans (part. B).*  
*hemialis (adj. B), hyemalis (adj. B): belonging to winter, wintry; cf. HIBERNUS.*  
*Hiems (s.f. III. vi): winter.*  
*high: altus (adj. A), celsus (adj. A), elatus (part. A), excelsus (part. A), procerus (adj. A). highly: maxime (adv.), alte (adv.) (used of height).*  
*hilaris (adj. B): relating to the hilum.*  
*Hill: collis (s.m. III. vii), abl. pl. collibus. pertaining to hills: collinus (adj. A).*  
*Hilum: hilum (s.n. II), abl. sing. hilo, lit. 'a trifle'; hilum rotundatum basale 4 mm. diametro, hilum rounded basal 4 mm. in diameter; semina globosa hilo rotundato, seeds globose with hilum rounded.*  
*himanto-: in Gk. comp., strap-shaped; himantoglossus, with a strap-shaped tongue.*  
*hinc (adv.): from this place, from this side, from this time, after this; hinc atque illinc, on both sides; hinc et inde, from different directions; hinc . . . hinc . . ., on this side . . . on that side . . ., here . . . there . . .*  
*hinnuleus (adj. A): fawn-coloured.*  
*hippocrepicus (adj. A), hippocrepiformis (adj. B): shaped like a horseshoe, i.e. bent almost into a circle, but with a distinct opening.*  
*hircinus (adj. A): smelling like a goat.*  
*Hirsuties (s.f. III): rough hair-covering.*  
*hirsutus (adj. A): hirsute, covered with fairly coarse and stiff long erect or ascending straight hairs.*

*hirti-: in L. comp., hairy, particularly with long distinct hairs; hirticalyx, with hairy calyx; hirticaulis, with hairy stem; hirtiflorus, with hairy flowers; hirtistylus, with hairy style. hirtus (adj. A): hairy: see HIRSUTUS. 273*  
*hispidus (adj. A): hispid, covered with coarse rigid erect hairs or bristles harsh to the touch. 277*  
*Historia (s.f. I): history, systematic account of natural phenomena.*  
*hoary: incanus (adj. A). 272*  
*hodiernus (adj. A): relating to the present time.*  
*Holdfast: hapteron (s.n. II). Holdfast-cell: cellula (s.f. I) hapteroidea, tenaculum (s.n. II).*  
*holding: tenens (part. B), retinens (part. B) 'keeping hold of', continens (part. B) 'containing', haerens (part. B) 'clinging'.*  
*Hole: foramen (s.n. III): a round hole made by boring', cavum (s.n. II) 'hollow, cavity'. holed: foratus (part. A), porosus (adj. A), perforatus (part. A); cf. LATTICED.*  
*hollow: cavus (adj. A). hollowed out: excavatus (part. A), exaratus (part. A) 'ploughed out'; semina obovata ventre excavata, seeds obovate in the lower side hollowed out; putamen compressum a ventre sulco lato profundo in longitudinem exaratum, stone compressed at the lower side by a wide deep furrow lengthwise ploughed out.*  
*holo-: in Gk. comp., entire, complete, whole, undivided; holocarpus, with undivided fruits; holodontus, with entire teeth; holognys, with entire ovary.*  
*holodactylus (adj. A): has same meaning as monarthrodactylus.*  
*Holotype: holotypus (s.m. II).*  
*homoeo-, homoeo-, homoio-: in Gk. comp., like, of the same kind, agreeing; homocarpus, with one kind of fruit only; homogamus, with only one kind of flower in the cluster; homosporus, with spores of the same kind and size; cf. HETER-, SAME.*  
*homoeomorphus (adj. A): (in Charophyta) with sterile and fertile whorls similar.*  
*homogeneous (adj. A): homogeneous, uniform in structure.*  
*Homogonium: homogonium (s.n. II).*  
*homomerous, isomeric: homomerus (adj. A), isomerus (adj. A).*  
*homomallous (adj. A): homomallous, i.e. all turned in the same direction.*  
*Homonymum (s.n. II): homonym.*  
*homotropus (adj. A): turned or curved in one direction. 436*  
*Honey: mel (s.n. III. v), gen. sing. mellis. honey-coloured: melleus (adj. A).*

*Honey-comb: favus (s.m. II). honey-combed: favosus (adj. A). 250*  
*Hood: cucullus (s.m. II). hooded: cucullatus (adj. A). 93*  
*Hook: uncus (s.m. II): hook-shaped: unciformis (adj. B). hooked: uncatus (adj. A), uncinatus (adj. A), hamatus (adj. A), aduncus (adj. A). 147*  
*horizontal: horizontalis (adj. B). horizontally: horizontaliter (adv.). 398*  
*Hormogon: hormogonium (s.n. II), nom. pl. hormogonia, abl. pl. hormogoniis; hormogonia lateralia verticillata 45  $\mu$  lata e cellulis 10-12 composita, hormogonia lateral verticillata 45  $\mu$  broad from 10-12 cells made up; hormogonia terminalibus vel lateralis oppositisque 45  $\mu$  longis, with hormogonia terminal or lateral and opposite 45  $\mu$  long.*  
*Horn: cornu (s.n. IV), gen. sing. cornus, abl. sing. cornu, nom. pl. cornua, abl. pl. cornibus; in L. comp., -cornu, -cornis, corni-, in Gk. comp., -ceras, -ceros, cerato-; bicornis, diceras, two-horned; brevicornis, brachyceras, with short horn; corniger, ceratophorus, horn-bearing, horned; cornutus (adj. A). horn-shaped: cornutus (adj. A). horny: corneus (adj. A). 55, 320*  
*hornotinus (adj. A): belonging to the present year, not a year old; ramuli hornotini pilosi, annotini glabri, vetustiores crassi cortice griseo fissi, branchlets of this year's growth pilose, of last year's growth glabrous, the older ones thick with the bark grey fissured.*  
*Horologium (s.n. II): clock; horologium floral, floral clock.*  
*Horreolum (s.n. II): an organ or area on which pollen collects, lit. 'a little granary'.*  
*horricomis (adj. B): bristly, shaggy.*  
*horridus (adj. A): sticking out, prickly, rough, bristly.*  
*Horse: equus (s.m. II), gen. pl. equorum or equum. pertaining to horses: equinus (adj. A); in Gk. comp., hippo.*  
*horseshoe-shaped: hippocrepicus (adj. A), hippocrepiformis (adj. B).*  
*hortensis (adj. B): pertaining to gardens, raised in a garden. Hortulanus (s.m. II): gardener; hortulanorum, of gardeners.*  
*Hortus (s.m. II): garden; hortorum, of gardens; hortus siccus, herbarium; Hortus Medicus, Physic Garden; cf. OLERARIUM, SEMINARIUM.*  
*Host (of parasite): hospes (s.m. II. ii), gen. sing. hospitis, abl. sing. hospite; see NOURISHING, NUTRUX.*  
*hot: calidus (adj. A); cf. TEMPERATE.*  
*Hot Springs: thermae (s.f. II. pl.); in thermis euganeis, in hot springs of the Colli Euganei near Padua.*  
*hymen-: in Gk. comp., membrane, membranous, skinny; hymenocarpus, with membranous fruits; hymenosepalus, with membranous sepals.*  
*Hymenium: hymenium (s.n. II), gen. sing. hymenii, abl. sing. hymenio.*

**hyp-**, **hypo-**: in Gk. *comp.*, below, under, beneath, lower; *hypargyreus*, silvery beneath; *hypochryseus*, golden beneath; *hypogaeus*, below the ground; *hypoglaucus*, glaucous beneath; *hypolasius*, woolly beneath; *hypolepidotus*, scaly beneath; *hypoleucus*, white beneath; *hypophaeus*, dark beneath; *hypophyllus*, beneath the leaf; *hypostictus*, spotted beneath.

**Hypanthiun**: hypanthium (s.n. II), *abl.* *sing.* *hypanthio*.

**hyper-**: in Gk. *comp.*, beyond, over, above. **hyperboreus** (adj. A): belonging to the extreme north, northern; cf. *BOREALIS*.

**Hypha**: hypha (s.f. I), *nom. pl.* *hyphae*, *gen. pl.* *hypharum*, *abl. pl.* *hyphis*; *hyphae hyalinæ haud inflatae 2-3  $\mu$  latae plus minusve crasse tunicatae septatae, fibulis carentes vel eis solum ad basim basidiorum praeditae*, hyphae hyaline never inflated 2-3  $\mu$  broad more or less thickly tunicated septate, lacking fibulae or provided with these only at the base of the basidia; *hyphis albidos rectis vel leniter undulatis 6-8  $\mu$  crassis septatis articulis 20  $\mu$  longis* unilateralter ramosis fibulatis, with hyphae whitish straight or gently undulate 6-8  $\mu$  thick with joints 20  $\mu$  long) on one side branched possessing clamp-connexions; cf. *TEXTURA*.

**Hyphopodium**: hyphopodium (s.n. II), *nom. pl.* *hyphopodia*, *abl. pl.* *hyphopodiis*: *hyphopodia capitata alternata suberecta plerunque recta 20-30  $\mu$  longa, cellula basali cylindracea 3-6  $\mu$  longa, cellula apicali irregulariter stellatolobata*, capitate hyphopodia alternate almost erect commonly straight 20-30  $\mu$  long with basal cell cylindric 3-6  $\mu$  long with apical cell irregularly stellate-lobed; *hyphopodia mucronata nulla*, mucronate hyphopodia nil.

**hypous** (adj. A): full of hyphae.

**Hypnospora**: *hypnospora* (s.f. I): see *SPORE*.

**hypo-**: see *HYP-*.

**Hypocotyl**: hypocotylus (s.m. II), *internodium* (s.n. II), hypocotylum. **hypocotylary**: hypocotylus (adj. A).

**hypocraterimorphus** (adj. A), **hypocrateriformis** (adj. B): hypocotyliform, salver-shaped, i.e. with a long narrow tube abruptly expanded into a shorter flat or spreading limb. 70

**Hypoderm**: hypoderma (s.n. III), *abl. sing.* *hypodermate*.

**hypodermicus** (adj. A): under the epidermis.

**hypogaeus** (adj. A): hypogaeal, growing or remaining below ground. 470

**Hypogynium**: hypogynium (s.n. II), *abl. sing.* *hypogynio*.

**hypogynus** (adj. A): hypogynous, i.e. situated below base of ovary or oogonium. 473

**hypophyllus** (adj. A): hypophyllous, i.e. growing on the underside of leaves; *in hypophyllo*, on the lower leaf-surface.

**Hypothallus**: hypothallus (s.m. II), *abl. sing.* *hypothallo*. **hypothallinus** (adj. A): relating to the hypothallus.

**Hypotheca**, **Hypovalve**: hypotheca (s.f. I), *abl. sing.* *hypotheca*; *hypovalva* (s.f. I), *abl. sing.* *hypovalva*.

**hypophyllinus** (adj. A): hypophyllary, bracteal. **Hypsophyllum** (s.n. II): hypophyll, i.e. bract of the inflorescence.

**hysteranthus** (adj. A): following the flowers; used of leaves produced later than the flowers, as in the almond, many species of *Colchicum*, etc.; cf. *PRÆCOX*, *SYNANTHUS*, also *COAETANUS*, *PROTERANTHUS*.

**hysterinus** (adj. A), **hysteriformis** (adj. B), **hysterioideus** (adj. A): hysterine i.e. long and cleft like the sporocarp (hysterothecium, fruit-body) of *Hysterium*.

**hysterogenous** (adj. A): late-produced, e.g. leaves produced after flowering; cf. *PRIMIGENUS*.

## I

**iadinus** (adj. A): jade-green (H.C.C. 54).

**iam**: see *JAM*.

**ibi** (adv.): there, on the spot, then, there-upon.

**-ibus**: abl. and dat. pl. ending of s. III, s. IV and adj. B, meaning mostly 'with' but also 'from, by, in' (when abl.) and 'to, for' (when dat.); *planta floribus paten-tibus, staminibus viridibus*, plant with spreading flowers, with green stamens.

**Ice**: glacies (s.f. V).

**Icon** (s.f. III): illustration, plate; *icones plantarum novarum, rariorū vel minus cognitarum*, illustrations of new, rare or little known plants; *nova genera plantarum descripta et iconibus illustrata*, new genera of plants described and with plates illustrated; *ex iconē*, from (according to) the illustration; see *ILLUSTRATION*.

**icosandrus** (adj. A): with twenty stamens.

**icterinus** (adj. A): jaundice-yellow.

**Ictus** (s.m. IV): stab, bite, sting; *nomen Pruni cornutae datum ob ovaria insectorum ictu in cornu excrescentia*, name of *Prunus cornuta* given on account of the ovaries by the sting of insects growing out into a horn.

**idem**, **eadem**, **idem** (pron.): the same; *color pilei idem ac Polypori adusti*, colour of pileus the same as that of *Polyporus adustus*.

**identical** with: idem atque, idem ac, similis (adj. A); see *SAME*.

**ideo** (adv.): for that reason, therefore.

**idome** (adv.): suitably, fitly. **idoneus** (adj. A): suitable, convenient, sufficient.

**if**: si (conj.); *caulis solidus aut si cavus nunc firmus*, stem solid or if hollow then firm; *vix aut haud*, scarcely if at all.

**igitur** (adv.): then, therefore, accordingly. **igneans** (part. B): glowing, burning, i.e. bright-red. **igneus** (adj. A): fire-red (H.C.C. 15), flame-colour. **ignivomus** (adj. A): fire-vomiting, volcanic.

**ignotus** (adj. A): unknown; see *INCOGNITUS*.

**illa** (adv.): in that direction.

**illaqueans** (part. B): ensnaring, entrapping.

**ille** (dem. pron. m.), **illa** (dem. pron. f.), **illud** (dem. pron. n.): that, he, she, it; sometimes used to indicate celebrity or emphasis, e.g. *Winnie ille Pu*, Winnie-the-Pooh; in contrasts *hic* indicates the nearer, *ille* the more remote; *hic ... ille ...*, this ... that ..., the one ... the other.

**illecebrosus** (adj. A): alluring, attractive.

**illegitimus** (adj. A): unlawful; *nomen illegitimum*, name contrary to the rules of nomenclature, illegitimate name.

**illuc** (adv.): in that place, there; cf. *HIC*.

**illinc** (adv.): from that place, thence.

**illinitus** (part. A): smeared, daubed over, overspread.

**illustrated**: illustratus (part. A).

**Illustration**: icon (s.f. III), *gen. sing.* *iconis*, *abl. sing.* *iconē*, *nom. pl.* *icones*, *gen. pl.* *iconum*, *abl. pl.* *iconibus*; *imago* (s.f. III), *gen. sing.* *imaginis*, *abl. sing.* *imagine*, *nom. pl.* *imagines*, *gen. pl.* *imaginum*, *abl. pl.* *imaginibus*; *figura* (s.f. I), *nom. pl.* *figuræ*, *abl. pl.* *figuris*; *illustratio* (s.f. III), *nom. pl.* *illustrationes*, *abl. pl.* *illustrationibus*; *tabula* (s.f. I), *nom. pl.* *tabulæ*, *abl. pl.* *tabulis*. *icones sunt ligneæ, aeneæ, fundimentales absque umbra, fucatae vivis coloribus, originales ex foliis ipsis loco typi, pretiosæ, malæ*, illustrations are wooden (i.e. woodcuts), copper (i.e. copper engravings), plain without shading, painted in natural colours, original from the leaves themselves (i.e. nature prints), of great value, bad; *icones selectæ ex vivo delineatae*, selected illustrations drawn from living material; *iconum botanicarum index locupletissimus*, of illustrations botanical an index most rich; *explicatio iconis*, explanation of the illustration; *species graminum iconibus illustratae*, species of grasses with

plates illustrated; *icones aeri sculptæ*, illustrations on copper engraved; *tabulae coloratae et tabulae nigrae analytice aeri incisa*, plates coloured and plates black (i.e. black-and-white) analytical on copper engraved; *tabulae pictæ*, plates painted; *plantarum imagines in aës incisa*, *et vivis coloribus pictæ*, of plants the likenesses in copper engraved and with living (i.e. natural) colours painted; *xylographia exhibit stirpem foliis lanceolatis eximie maculatis*, the woodcut shows a plant with leaves lanceolate exceedingly spotted; *cum figuris xylographice expressis*, with woodcut figures; *figuræ plantarum maxima pro parte ex Passaeo petitæ*, figures of plants for the most part from *Passaeus* (i.e. Crispin de Passe) taken; *ut in illustratione originali*, as in the original illustration. See W. Blunt & W. T. Stearn, *The Art of Botanical Illustration* (1950), C. Nissen, *Die botanische Buchillustration* (1951-52), S. Sitwell & others, *Great Flower Books* (1956).

**Imago** (s.f. III. vi): likeness, figure; see *ILLUSTRATION*.

**imbecillus** (adj. B), **imbecillus** (adj. A): weak, feeble.

**imbedded**: inclusus (part. A) in (prep. with abl.); *in gelatina inclusus*, imbedded in gelatine.

**imberbis** (adj. B): beardless.

**imbricate**: imbricatus (part. A), imbricans (part. B); *imbricativus* (adj. A) is used only of aestivation. 376, 484

**imitating**: mentiens (part. B), simulans (part. B); *involucrum calycem mentiens*, involucle imitating a calyx.

**immaculatus** (adj. A): unspotted, unstained.

**immarginatus** (adj. A): without a distinct margin, border or rim.

**immature**: immaturus (adj. A), crudus (adj. A)

**immediately**: statim (adv.) 'at once, forth-with', confessim (adv.) 'speedily, forth-with', proxime (adv.) 'nearest, next'; *proxime super nodum*, immediately above the node; *cellula quasi confessim mobili facia*, cell almost immediately made motile.

**immensus** (adj. A): immense, vast, boundless.

**Immersio** (s.f. III): immersion.

**immersus** (part. A): submerged, imbedded, covered up, immersed.

**imminens** (part. B): overhanging; cf. *IMPENDENS*.

**imminuens** (part. B): diminishing, *imminutus* (part. A): diminished, reduced in size.

**immixtus** (part. A): intermixed, mingled with.

immo (adv.): on the contrary, by no means.  
 immobile: immobilis (adj. B), fixus (part. A), immotus (adj. A).  
 immutabilis (adj. B), immutatus (adj. A): unchangeable, unchanged.  
 impar (adj. B): uneven, unequal, dissimilar. impariter (adv.): unequally.  
 imparipinnate: imparipinnatus (adj. A).<sup>209</sup>  
 impassable: impervius (adj. A).  
 impeditus (part. A): hindered, obstructed, hence not completely formed.  
 impellucidus (adj. A): opaque, not pellucid.  
 impendens (part. B): overhanging; cf. IMMINENS.  
 impenetrable: impenetrabilis (adj. B).  
 impensa (s.f. I): outlay, cost, expense; impensis Salvii, at the cost of Salvius.  
 imperfect: imperfectus (adj. A), inchoatus (part. A), mancus (adj. A), mendosus (adj. A).  
 imperforatus (adj. A): not perforated.  
 impervius (adj. A): impassable.  
 impigre (adv.): actively, energetically.  
 implens (part. B): filling.  
 impletus (part. A): filled, q.v.  
 implexus (part. A), implicatus (part. A), implicitus (part. A): entangled, entwined, interwoven, interlaced.  
 impolitus (adj. A): unpolished, matt. **299**  
 impositus (part. A): laid upon, placed upon, i.e. of an organ or part not gradually passing into another.  
 impressi: in *L. comp.*, sunken, impressed; *impressinervis*, with sunken nerves; *impressivenius*, with sunken veins. impressus (part. A): impressed, sunk below the surface as if pressed in; *nervo medio supra bene impresso*, with middle nerve above well impressed.  
 imprimis (adv.): in the first place, chiefly.  
 impudicus (adj. A): immodest, shameless.  
 impure: impurus (adj. A), contaminatus (adj. A).  
 impunctatus (adj. A): not punctate; cf. PUNCTATUS.  
 imum (s.n. II): lowest part, bottom.  
 imus (adj. A): lowest, lowermost.  
 in (prep. with abl. and acc.): in, within, among, at, into, on to, towards, during, on. Used with acc. when motion or growth or action of some kind towards or into something may be envisaged by an ingenious effort of the imagination, with abl. when rest is indicated, a more usual botanical condition. *ex* and *in* are associated in phrases indicating progression, just as are *ab* and *ad*. 'in' is sometimes best translated by *per* or *velut*, q.v.; in *sylva Amazonica*, in *foliis vivis*, raro in *cortice crescens*, in Amazonian forest, on living leaves, rarely on bark growing; in *corticibus arborum*

*tropicarum*, on barks of tropical trees; in *arboribus et rupibus inter muscos in America tropica*, on trees and rocks among mosses in tropical America; species 8 in *aquis dulcibus Americae temperatae vel tropicae dispersae*, una in *variis locis Europae inquiline*, species 8 in fresh waters of temperate or tropical America dispersed, one in various places of Europe naturalized; *herba in siccis frequens*, herb in dry places frequent; species in *silvis Italiæ indigena et hinc in hortis Europæ mediae translatæ*, *hodie quoque in hortis botanicis culta et passim in nemoribus spontanea facta*, species in woods (*abl.*) of Italy indigenous and from here into gardens (*acc.*) of central Europe transported, today also in botanic gardens (*abl.*) cultivated and here and there in groves (*abl.*) spontaneous made, i.e. naturalized; *folia in rhizomate conferta*, leaves on the rhizome crowded together; *planta in statu florendi*, plant in flowering state; *indumentum canum in inflorescentiis floribus petiolis foliorumque nervis mox deciduum, jam tempore florendi in nodis ramulorum et in extremitibus inflorescentiarum tantum persistens*, hair-covering grey on the inflorescences, flowers, petioles and nerves of the leaves soon falling, already at the time of flowering on nodes of branchlets and tips of inflorescences alone persisting; *dentibus in quoque latere 5-10*, with teeth on each side 5-10; *folia in paribus aequimagna*, leaves of the same pair equal in size; *petala in aestivatione valvata*, petals in aestivation valvate; *folia basi in petiolum cuneatum angustata*, leaves at base into a cuneate petiole narrowed; *pedicelli in calycem sensim ampliati*, pedicels into the calyx gradually expanded; *corona in denticulos lineares lacerata*, corona into little linear teeth lacerated; *ovarium viride in stylis purpureos transiens*, ovary green into styles purple passing gradually; *filamenta in foveam dorsalem antherarum intrusa*, filaments into a little dorsal pit of anthers thrust (inserted); in *hoc libro*, in this book; *semen a latere visum*, seed in side view, seed seen from the side; *costa in sectione transversali e 3 stratis cellularum formata, ventrali e cellulis ampliis inanibus, interno e cellulis incrassatis, dorsali e cellulis parvis*, midrib in transverse section from 3 layers of cells formed, with the ventral from large empty cells, the inner from thickened cells, the dorsal from small cells.

inactive: iners (adj. B); cf. AGILIS, MOBILIS.  
 -inae: adj. nom. f. pl. ending added to stem of name of synonym of type genus to form name of subtribe, e.g. *Rutinae* from *Ruta*.  
 inaequabilis (adj. B), inaequalis (adj. B): unequal. inaequi-: in *L. comp.*, unequal, uneven; *inaequilateris*, *inaequilaterus*, with unequal sides; *inaequimagnus*, not of the same size. inaequaliter (adv.): unequally. **134, 136**  
 inamyloideus (adj. A): not amyloid; *hyphis omnibus inamyloideis*, with all hyphae not giving a blue reaction to iodine.  
 inanis (adj. B): empty.  
 inapertus (adj. A): not open, closed, although normally open.  
 inarticulatus (adj. A): without divisions.  
 incanus (adj. A): hoary, white. **272**  
 incarnatus (part. A): flesh-coloured.  
 incertus (adj. A): uncertain, doubtful.  
 Inch: pollex (s.m. III. i), nom. pl. pollices 'thumb'; uncia (s.f. I), nom. pl. unciae 'twelfth part'; approx. 2.5 cm. inch-long: pollicaris (adj. B), uncialis (adj. B).  
 inchoatus (part. A): incomplete, unfinished, imperfect, rudimentary.  
 incidens (part. B): meeting.  
 incisifolius (adj. A): with deeply cut leaves.  
 Incision: incisura (s.f. I).  
 incisus (part. A): cut deeply and sharply. **190**  
 inclinatus (part. A): bent down, diverging downwards from the horizontal. **405**  
 includens (part. B): including.  
 inclusus (part. A): included, enclosed, not projecting, comprised within; *stamina inclusa*, stamens not projecting; *folium (petiolo 3 cm. longo inclusum) 10 cm. longum*, leaf (with petiole 3 cm. long included) 10 cm. long, *cum* can also be used, e.g. *cellula (cum tuberculo) 1 mm. longa*, cell (including tubercle) 1 mm. long.  
 incoctus (adj. A): uncooked, raw.  
 incognitus (adj. A): unknown; cf. IGNOTUS.  
 Incola (s.c. I): dweller, inhabitant, resident; species *montium Africæ tropicæ imprimis orientalis incola*, the species of the mountains of tropical Africa particularly eastern an inhabitant. incolens (part. B): inhabiting, q.v.; cf. -COLA, INHABITANT.  
 incolor (adj. B), incoloratus (adj. A): colourless.  
 incomparabilis (adj. A): beyond compare, unequalled.

incomplete: incompletus (adj. A), inchoatus (part. A), imperfectus (adj. A).  
 inconspicuous: inconspicuus (adj. A).  
 inconstans (adj. B): changeable, not constant (opp. of IMMUTABILIS).  
 incorrect: mendosus (adj. A). incorrectly: perperam (adv.), errore, mendose (adv.); cf. ERROR, FALSELY.  
 incrassatus (part. A): thickened.  
 Increase: augmen (s.n. III), gen. sing. augminis; augmentum (s.n. II), gen. sing. augmenti.  
 increased: auctus (part. A). increasing: crescens (part. B). increasing in thickness: spissescens (part. B).  
 increbre (adv.): frequently.  
 Incrementum (s.n. II): increase, increment.  
 incrusted: incrustatus (part. A). incrusting: incrustans (part. B).  
 incubaceus (adj. A): lying on the ground.  
 incubus (adj. A): incubous, obliquely inserted on the stem so that the leaf edge nearest the shoot-tip overlaps and thus covers the lower edge of the leaf above.  
 incurveformis (adj. B): anvil-shaped.  
 incultus (adj. A): untilled, not cultivated, used of habitats. Incultum (s.n. II): wasteland, uncultivated ground.  
 incumbens (part. B): incumbent, folded inwards and lying upon, used of cotyledons having the radicle resting on one side of a cotyledon instead of along the edge; *cotyledones incumbentes*, cotyledons incumbent.  
 incurrens (part. B): over-running; see INCUBUS.  
 incurvus (adj. A), incurvus (adj. A): curved inwards. **410**  
 incystatus (adj. A): encysted.  
 inde (adv.): from that place, thence, from that time, thenceforward, after that, then.  
 indefessus (adj. A): unwearied, indefatigable; an epithet often and rightly applied to the great eighteenth- and nineteenth-century systematists.  
 indefinite: indefinitus (adj. A).  
 indehiscent (adj. B): indehiscent, not opening at all or not splitting in a regular manner, e.g. by valves or along a definite line, when ripe; cf. SEPTICIDALIS, SYNCLISTUS.  
 indent: indentatus (adj. A).  
 indescriptus (adj. A): undescribed.  
 indeterminate: indeterminatus (adj. A).  
 Index (s.m. III. i): catalogue, list, index.  
 Indicatio (s.f. III): indication. indicatus (part. A): pointed out, showed, revealed.  
 indigenous: indigenus (adj. A).  
 Indigo: indicum (s.n. II), abl. sing. indicu; *fructibus contusis indici colorem conspicuum exhibentibus*, with bruised

fruits the conspicuous colour of indigo exhibiting; *filamentis indico coloratis*, with filaments coloured with indigo; *flores colore indici tincti*, flowers with the colour of indigo tinged. *indigo-coloured*: *indigoticus* (adj. A).

*indirectly*: *indirecte* (adv.).

*indiscriminately*: *promiscue* (adv.) 'in common, promiscuously', *passim* (adv.) 'hither and thither, at random'.

*indistinct* (adj. A): not distinct, unclear, ill-defined.

*indistinguishable*: *haud distinctus* (part. A), *simillimus* (adj. A).

*Individual* (s.): *individuum* (s.n. II), *abl. sing.* *individuo*, *nom. pl.* *individua*, *abl. pl.* *individuis*; *individua libera solitaria vel binatim cohaerentia vel seriata vel varie consociata*, individuals free solitary or by pairs cohering or in series or variously united; *individua in mucro nidulantia radiatim in circulum plus minus completum planum coadjuncta*, individuals in slime nestling, radiately into a circle or less complete flat joined together. *individual* (adj.): *singulus* (adj. A) (*generally used in pl.*); *singulae cellulae*, individual cells. *individually*: *singulatim* (adv.), *singulariter* (adv.).

*indivisus* (adj. A): undivided.

*Indoles* (s.f. III): inborn quality, nature.

*Indumentum* (s.n. II): hair-covering, q.v. *induplicatus* (adj. A): induplicate, i.e. having the margins bent abruptly inwards and the outer face of these folds applied to each other without any twisting. 370

*induratus* (part. A): hardened. *indurescens* (part. B): becoming hard.

*indusiatus* (adj. A): indusiate, possessing an indusium. *Indusium*: *indusium* (s.n. II), *gen. sing.* *indusii*, *abl. sing.* *indusio*, *nom. pl.* *indusia*, *gen. pl.* *indusiorum*, *abl. pl.* *indusis*, *lit.* 'a woman's under-garment'.

*indutus* (part. A, with *abl.*) clothed with.

*Induviae* (s.f. I. *pl.*): persistent parts, e.g. withered leaves nevertheless persisting on the shoot or accrescent or withered calyx, corolla or perigon clothing the fruit. *induviatus* (adj. A): clothed with withered parts, as a stem with persistent dead leaves; cf. MARCESCENS, REMANENS.

*-ineae* (adj. A): *nom. f. pl.* ending added to stem of name of type of family to form name of suborder, e.g. *Malvineae* from *Malvaceae*.

*inermis* (adj. B): unarmed, without spines, prickles or stings. 260

*iners* (adj. B): inactive, sluggish, inert, stagnant.

*inxpectatus* (adj. A): unexpected, q.v. *infectus* (part. A): spoiled, infected.

*inferior* (adj. comp.): lower. *inferne* (adv.): below, beneath, in lower part.

*inferioramifer* (adj. A): branched in the lower part.

*infernus* (adj. A), *inferus* (adj. A): lower, that which is beneath; *ovarium inferum*, ovary inferior, i.e. bearing at its top the perigon, etc.

*infestans* (part. B): infesting, attacking. *infestus* (adj. A): troublesome, becoming a weed.

*inficiens* (part. B): tainting, infecting, spoiling.

*infime* (adv.): at the bottom. *Infimum* (s.n. II): lowest part, bottom. *infimus* (adj. A): lowest, lowermost.

*inflatus* (part. A): bladdery, i.e. thin, membranous and swollen; cf. VESICARIUS. 96

*inflexus* (adj. A): bent inwards; cf. INTROFLEXUS. 418

*Inflorescence*: *inflorescentia* (s.f. I), *abl. sing.* *inflorescentia*, *nom. pl.* *inflorescentiae*, *abl. pl.* *inflorescentiis*, 'flowering', adopted by Linnaeus for the manner in which flowers are arranged on the plant and hence for the flowers themselves considered collectively with their supports, this constituting a flower-bearing branch or system of branches with no ordinary foliage leaves between the flowers. Types of inflorescence are the *anthela* (*anthela*, s.f. I), *bostryx* (*bostryx*, s.m. III. i), *catkin* (*amentum*, s.n. II), *cincinnus* (*cincinnus*, s.m. II), *corymb* (*corymbus*, s.m. II), *cyathium* (*cyathium*, s.n. II), *cyme* (*cyma*, s.f. I), *dichasium* (*dichasium*, s.n. II), *drepanium* (*drepanium*, s.n. II), *head* (*capitulum*, s.n. II), *panicle* (*panicula*, s.f. I), *raceme* (*racemus*, s.m. II), *rhipidium* (*rhipidium*, s.n. II), *spadix* (*spadix*, s.m. or f. III. i), *spike* (*spica*, s.f. I), *spikelet* (*spicula*, s.f. I), *thyrse* (*thyrus*, s.m. II), *umbel* (*umbella*, s.f. I), *verticillaster* (*verticillaster*, s.m. II).

These nouns may be used, or else the term *inflorescentia* may be qualified by an adjectival form as *corymbosa*, *cymosa*, *dichasialis*, *capitato-paniculata*, *racemosa*, *spicata*, *thrysifera*, *umbellata*; see H. W. Rickett, 'The classification of inflorescences', *Bot. Review*, 10: 187-231 (1944); *flores in axillis foliorum 2-4 umbelliformi-dispositi e rhachi subnulla prodeunt*, flowers 2-4 in axils of leaves umbellately arranged, from an almost non-existent rachis produced; *inflorescentia simplex vel ramosa e rhipidiis multis ad 10-floris composita*,

inflorescence simple or branched from many rhipidia up to 10-flowered put together; *inflorescentia varia floribus in corymbos umbelliformes vel thyrsos densifloros vel paniculas axillares vel terminales dispositis*, inflorescence varied, with the flowers in corymbs umbel-like or thyrses dense-flowered or panicles axillary or terminal arranged; *inflorescentia normaliter 2-3-chotome cymosa*, *cymos terminalibus paniculatis vel axillaris*, inflorescence normally di- or trichotomously cymose, with the cymes terminal paniculate or axillary; *inflorescentia racemosa simplex erecta glabra pauciflora* (*floribus* 4-5), *folio caulin brevior*, 5-10 cm. *longa*, inflorescence racemose simple erect glabrous few-flowered (with flowers 4-5), shorter than the stem leaf, 5-10 cm. long; *inflorescentiae masculae ad apices ramorum pgrcae breviter pedunculatae*, *femineae*, *ad axillas foliorum sessiles numerosae*, *omnes glomeratae multiflorae*, male inflorescences at tips of branches few shortly pedunculate, female at axils of leaves sessile numerous, all compactly clustered many-flowered.

*infossus* (part. A): buried, sunken.

*infra* (adv.): on the underside, beneath, below. *infra* (prep. with acc.): below, under, later than, less than. *infra- apicalis* (adj. B): placed below the apex. *infra-axillaris* (adj. B): placed below the axil. *infracentralis* (adj. B): placed below the centre.

*infractus* (part. A): sharply bent, incurved. 410

*inframedianus* (adj. A): slightly or somewhat below the middle.

*infraterminalis* (adj. B): below the apex.

*infrequent*: infrequent (adv.), rarius (adv.), interdum (adv.), sparse (adv.).

*infundibularis* (adj. B), *infundibuliformis* (adj. B): funnel-shaped. 71

*infuscatus* (adj. A): brownish.

*Infusion*: *infusum* (s.n. II), *decoctum* (s.n. II)

*ingens* (adj. B): exceeding the size usual for the group, huge.

*ingratus* (adj. A): unpleasant, disagreeable.

*ingredens* (part. B): entering, going in.

*Inhabitant*: *incola* (s.f. I); *species hemisphaerii borealis incolae*, species inhabitants of the northern hemisphere.

*inhabiting*: *incolens* (part. B), *habitans* (part. B), *crescents* (part. B), *indigenus* (adj. A), *proveniens* (part. B), *vigens* (part. B); *arbor parva Malabariae littora incolens*, tree small of Malabar the coasts inhabiting; *arbores Asiae littora tropica incolentes*, trees of Asia

the tropical coasts inhabiting; *frutex in India boreali crescents*, shrub in north India growing; *frutices in America et Africa tropica crescentes*, shrubs in America and tropical Africa growing; *herba in Capite Bonae Spei indigena*, herb at the Cape of Good Hope indigenous; *herbae in Europa australi indigenae*, herbs in southern Europe indigenous; *species in aridis Europae orientalis et Asiae mediae provenientes*, species in dry places of eastern Europe and central Asia occurring; *species littora lacuum habitantes*, species inhabiting the shores of lakes; *frutices in insula Madagascar crescentes*, shrubs in the island Madagascar growing. *iniens* (part B): entering, going in; cf. INGREDIENS.

*Initial* (s.): *initium* (s.n. II). *initial* (adj.): *primus* (adj. A).

*Initium* (s.n. II): beginning.

*injurious*: *noxius* (adj. A). *Injury*: *noxa* (s.f. I); cf. ICTUS, LAESIO, VULNUS.

*innatus* (part. A): innate, borne on apex of supporting part, adhering by growing into. 447

*inner*: *interior* (adj. comp.); *segmenta interiora*, inner segments; *intra margines interiores*, within the inner margins.

*innermost*: *intimus* (adj. A).

*innocuous* (adj. A), *innoxius* (adj. A): harmless, i.e. lacking poisonous properties, spines, bristles, etc.

*innominatus* (adj. A): unnamed, nameless.

*innovans* (part. B); renewing.

*Innovation*: *innovatio* (s.f. III. vi), *abl. sing.* *innovation*, *nom. pl.* *innovations*, *gen. pl.* *innovationum*, *abl. pl.* *innovationibus*; *gramen perenne*, *innovationibus intravaginalibus*, grass perennial, with new basal vegetative shoots growing up within the sheath; *innovations extravaginales*, new shoots outside the sheath.

*innoxius* (adj. A): see INNOCUUS.

*innumerabilis* (adj. B), *innumeratus* (adj. A): countless, innumerable.

*inodorus* (adj. A): without smell, scentless.

*inoperculatus* (adj. A): without a lid or operculum.

*inopinatus* (adj. A): unexpected, q.v.

*inordinate* (adv.), *inordinatum* (adv.), *inordinaliter* (adv.): irregularly, disorderly. *inordinatus* (adj. A): irregular, disordered.

*inquinatus* (adj. A): naturalized, introduced.; cf. FOREIGN.

*inquinatus* (part. A): fouled, stained, polluted, dirty, blackish.

*insculptus* (part. A): engraved, cut into, with sunken markings, embedded in.

Insect: insectum (s.n. II), gen. *sing.* insecti, *abl. sing.* insecto, nom. *pl.* insecta, gen. *pl.* insectorum, *abl. pl.* insectis. insect-: in *L. comp.*, insecti-, in *Gk. comp.*, entomo-; insectifer, bearing an insect, i.e. with flower shaped like an insect; insectifugus, driving away insects; insectivorous, insect-eating.

inserted: insertus (part. A), affixus (adj. A); *stamina tubo corollae supra basin sed infra medium inserta*, stamens to tube of corolla above base but below middle inserted; *stamina 4 exserta, corolla ad aut sub sinus affixa*, stamens 4 exserted, to the corolla at or below the sinuses attached. Insertion: insertio (s.f. III. vi).

insertus (part. A): affixed to, placed on, originating from.

Inside (s. pars (s.f. III) interior, inside (adj.): internus (adj. A), penitus (adj. A), on the inside: intra (adv.), intus (adv.), intrinsecus (adv.), interius (adv.), introrsum (adv.), penitus (adv.); see OUTSIDE. towards the inside: introrsum (adv.).

insidens (part. B, with dat.): sitting upon, situated upon; *bulbus cylindricus rhizomati tenero insidens*, bulb cylindric on a slender rhizome mounted; *perianthium germinalis insidens*, perianth (i.e. calyx) on the ovary situate (i.e. with a superior calyx).

insignis (adj. B): distinguished by, remarkable for, outstanding, noted. insigniter (adv.): remarkably, notably.

insimul (adv.): at the same time.

insipidus (adj. A): tasteless, insipid.

insiticus (adj. A), insititus (adj. A): grafted.

Insitum (s.n. II): a graft, scion.

inspersus (part. A): interpenetrated with granules, sprinkled upon.

inspissatus (adj. A): thickened.

Instar (s. indecl.): manner, likeness, form; ad instar (with gen.), like, in the form of.

instead of: vice (with gen.), ad invicem; *ordines dentium duos vice unius*, two rows of teeth, instead of one.

Institutio (s.f. III. vi): arrangement, custom, principle, element of instruction; *institutio rei herbariae*, elements of botany.

Institutum (s.n. II): institute, organization set up to promote a particular study; *institutum botanicum academieae*, botanical institute of the academy.

instructus (part. A): provided with.

insuetus (adj. A): unusual.

Insula (s.f. I): island, q.v. insularis (adj. B): pertaining to islands, insular.

insuper (adv.): above, on top, from above, moreover, besides. insuper (prep. with acc. and abl.): over, above.

intactus (adj. A): untouched, intact, entire.

integer (adj. A): entire, undivided, simple, without teeth or lobes or notches.

integerrimus (adj. A): absolutely entire. 179, 180

integri-: in *L. comp.*, entire; *integri-folius*, with entire leaves; *integri-labris*, with entire lip.

Integument: integumentum (s.n. II).

intense (adv.): intensely.

inter (prep. with acc.): between, among, in the midst of, surrounded by, during.

inter (adv. rarely used): in between, in the midst. interaneus (adj. A): inward, interior, internal.

intercalaris (adj. B): intercalary, arising between base and apex; *heterocystae intercalares*, heterocysts intercalary; *heterocystis intercalaris*, with heterocysts intercalary; cf. COPULA.

interceptus (part. A): interrupted, intercepted.

intercurrens (part. B): running between.

interdum (adv.): sometimes, now and then, occasionally.

interea (adv.): meanwhile, in the interim.

interfoliaceus (adj. A): interfoliaceous, i.e. placed between two opposite leaves.

interim (adv.): meanwhile, for a time, in the meantime.

interior (adj. comp.): inner, interior.

interius (adv.): in the inner part, on the inside, within.

interjacens (part. B): intervening, coming between.

interjectus (part. A): cast between, placed between, intermediate between.

intermediate: intermedius (adj. A); but interjectus (part. A), interpositus (part. A), medius (adj. A) may also be applicable.

interne (adv.): inwardly, internally. internus (adj. A): inward, internal.

Internode: internodium (s.n. II), *abl. sing.* internodium, *nom. and acc. pl.* internodia, *abl. pl.* internodiis; *internodia ramulis 2-5 plo longiora*, internodes than the branchlets 2-5 times longer; *caulis internodis elongatis*, stem with elongated internodes; *caules ad internodia radicans*, stems at internodes rooting.

interordinatus (adj. A): fitted together, fitted into one another.

interpetiolar: interpetiolaris (adj. B).

interpositus (part. A): placed between or among, interposed.

interruptedly: interrupte (adv.); *interrupte pinnatus*, interruptedly pinnate. 212

interruptus (part. A): interrupted, not continued. 500

interspersus (adj. A): strewn, interspersed.

Interstitium (s.n. II): space between, interstice.

Interval: intervallum (s.n. II), spatium (s.n. II)

intervening: interjacens (part. B).

interwoven: intertextus (part. A), implexus (part. A).

intestinalis (adj. B): relating to or found in the intestines. intestiniformis (adj. B): intestine-like (applied to lax hairs bent irregularly backwards and forwards and slightly constricted at intervals).

intestinus (adj. A): internal.

intime (adv.): in the inmost part, inwardly, internally. intimus (adj. A): inmost, innermost.

into: in (prep. with acc.); cf. IN.

intonus (adj. A): unshaven, hence bristly, shaggy.

intortus (part. A): twisted or bent upon itself.

intoxicated: temulentus (adj. A).

intra (adv.): on the inside, inwardly. intra (prep. with acc.): within, into, during.

intracyclicus (adj. A): intracyclicine, within the calyx.

intracellularis (adj. B): within a cell.

intramarginalis (adj. B): intramarginal, within and near the margin.

intrarius (adj. A): lying on the inside, turned inward to the axis.

intrastaminalis (adj. B): intrastaminal, within the stamens.

intricatus (part. A): entangled; cf. TEX-TURA.

intricate (adv.): intricately. 502

intrinsecus (adv.): on the inside, inwardly, towards the inside, inwards.

intro (adv.): inwardly, internally, to the inside (indicating motion).

introduced: introductus (part. A); cf. INQUILINUS.

intreflexus (adj. A): bent inwards; cf. INFLEXUS. 410

intromissus (part. A with in and acc.): sent in, introduced into.

introrsum (adv.): towards the inside, inwardly, on the inside.

introrsus (adj. A): introrse, turned towards the axis. 420

intrusus (part. A): thrust in, inserted.

Intuitus (s.m. IV): look, view; primo intuitu, at first glance.

intumescens (part. B): swelling up.

intus (adv.): on the inside, within; see INSIDE, OUTSIDE.

innactus (part. A): anointed, i.e. glossy as if oiled.

inundatus (part. A): flooded, usu. applied to places covered with water during part of the year, more or less dry the rest of the year.

invadens (part. B): attacking, invading.

invitus (part. A): attacked, invaded.

inverse (adv.), inversum (adv.): upside down. inversus (part. A): turned upside down or turned about. 399

investiens (part. B): clothing.

Investigatio (s.f. III. vi): investigation, research, enquiry.

invicem (adv.): in turn, one after another, alternately; ad invicem, instead of.

invisible: invisibilis (adj. B).

Involucel: involucellum (s.n. II), *abl. sing.* involucello, *nom. pl.* involucella, *abl. pl.* involucellis. involucellus (adj. B): involucral, of the involucle.

involucratus (adj. A): involucrate, having an involucle or ring or rings of bracts around the base of an inflorescence.

Involucrum: involucrum (s.n. II), *gen. sing.* involucri, *abl. sing.* involucro, *nom. pl.* involucra, *gen. pl.* involucrorum, *abl. pl.* involucris. flores (flosculi auct. plur.) plures in receptaculo communi (clinanthio auct. pl.) sessiles involucro communi (periclinio auct. pl.) e bracteis (squamis, phyllis vel phyllariis auct. plur.) 1-oo-seriatis liberis concretive cincti, capitulum (anthodium vel calathidium auct. plur.) florem singulum simulans formantes, flowers (florets of many authors) many on a common receptacle (clinanthium of many authors) sessile, by a common involucrum (periclinium of many authors) out of bracts (scales, phylla or phyllaries of many authors) in one to an indefinite number of series free or joined together surrounded, forming a head (anthodium or calathidium of many authors) resembling a single flower; involucrum cylindraceum angustum post anthesin basi aequale vel parum ampliatum, bracteis pauciseriatis scariso-marginatis fructiferis immutatis, intimis elongatis subaequalibus, exterioribus gradatim brevioribus vel paucis brevissimisque, involucro cylindric narrow after anthesis at the base even or little increased, with bracts in few series scariso-margined in the fruiting state unchanged, with the innermost ones elongated almost equal, with the outer ones gradually shorter or few and very short; involucri cylindrici viridis bracteae pauciseriatae scariso-marginatae acuminatae, of the cylindric green involucle the bracts in few series scariso-margined acuminate; involucra e basi late rotundata fere semiglobosa dense nigro-glandulosa, squamis lanceolatis acutis usque ad 1 cm. longis, involucrum from the base broadly

rounded almost half-globose densely black-glandular, with the scales lanceolate acute up to 1 cm. long; *involucris hemisphaericis vel campanulatis viridibus glandulosis*, with involucres hemispherical or campanulate green glandular; *involucri campanulati phylla imbricata nigra*, *praeter marginem interdum ciliatum glabra*, *quoad formam et magnitudinem valde variabilis*, *exteriora ovata*, *interiora oblonga*, of the campanulate involucres the phylla overlapping black, except for the sometimes ciliate margin glabrous, as to shape and size very variable, the outer ovate the inner oblong. The divisions of the involucrum have been variously termed, e.g. *bractea*, *phyllum*, *phyllarium*, *squama*, *tegula*.

**involutus** (part. A): involute, rolled inwards. **involvens** (part. B): enveloping.

365, 401

**inwardly**: *intrinsecus* (adv.), *intro* (adv.), *intime* (adv.), *introrsum* (adv.).

**io-**: *see ION*.

**Iodate**: iodas (s.m. III. ii), *gen. sing. iodatis*. **Iodide**: iodidum (s.n. II), *gen. sing. iodidi*. **Iodine**: iodum (s.n. II), *gen. sing. iodi*, *abl. sing. iodo*; *granulae iodo soluto madefactae vulgo colorem caeruleum ducentes*, granules with dissolved iodine moistened commonly a blue colour producing. **iodized**: iodatus (adj. A), iodatus (adj. A).

**ion-**, **io-**: in *Gk. comp.*, violet-coloured; *ionandrus*, with violet stamens; *ionanthus*, with violet flowers; *ionoglossus*, with violet tongue; *ionophyllum*, with violet leaves; *see VIOLET*.

**ipse** (demonst. pron.): self, himself, herself, itself.

**Iron**: ferrum (s.n. II). **iron**: ferreus (adj. A), q.v.

**irpicinus** (adj. A): like a rake or harrow. **irregular**: *irregularis* (adj. B), *asymmetricus* (adj. A) 'asymmetric', *zygomorphicus* (adj. A) 'divisible into equal halves along one plane only', *inordinatus* (adj. A) 'disordered, haphazard', *insolutus* (adj. A) 'unusual', *abnormis* (adj. B) 'without rule, abnormal'. **irregularly**: *irregulariter* (adv.), *irregularitatem* (adv.), *asymmetrice* (adv.). 99

**irriguous** (adj. A): well-watered, wet, soaked. **irritabilis** (adj. B): sensitive, responding to stimuli.

**isabellinus** (adj. A): isabella, soiled tawny yellow. The tale that it depicts the colour of the Archduchess Isabella's under-garments after three years of continuous wear without changing and washing is unfounded but suggests the colour.

**ischno-**: in *Gk. comp.*, thin, slender; *ischnopetalus*, narrow-petaled. **Isidum**: isidum (s.n. II), *abl. sing. isidio*, *nom. pl. isidia*, *abl. pl. isidiis*; *isidia claviformia coralliformia cylindrica*, *soredia squamiformia vel verruciformia*, isidia club-shaped coral-like cylindric, soredial scaly or warty; cf. Geesteranus in *Blumea*, 6: 47 (1947).

**Island**: insula (s.f. I), *gen. sing. insulae*, *abl. pl. insula*, *nom. pl. insulae*, *gen. pl. insularum*, *abl. pl. insulis*; *arbor Insulae Norfolk*, tree of Norfolk Island; *herbae in insula Madagascar crescentes*, herbs on island Madagascar growing; *Insulae Britannicae*, British Isles; *Americae tropicae et insularum Indiae occidentalis incolae*, of tropical America and of the islands of the West Indies dwellers; *species insularum Oceani pacifici*, species of islands of the Pacific Ocean; *frutices in insulis Canariis indigeni*, shrubs in the Canary Islands indigenous; *ex eadem insula*, from the same island; in *Bodotriae insulis*, on islets of the Firth of Forth, Scotland; *species pro insula diu cognita*, species for the island a long while known. **pertaining to islands**: *insularis* (adj. B); in *Gk. comp.*, *neso-*; *nesophilus*, island-loving. **iso-**: in *Gk. comp.*, equal, like; *isochilus*, with lip equal to other parts, equal-lipped; *isolepis*, with equal scales; *isomerus*, with equal parts, i.e. with the number of parts in one floral whorl the same as in another whorl; *isophyllus*, with equal leaves.

**isodiametral** (adj. A): isodiametrical, with vertical and horizontal diameters equal.

**Isogamete**: isogameta (s.f. I). **isolated**: *sejunctus* (part. A), *segregatus* (part. A).

**isolateral**: *aequilateralis* (adj. B). **isostichus** (adj. A): having equal rows.

**Isthmus**: isthmos (s.m. II). **it**: usually implied and not expressed, particularly when 3rd person sing. verb is used; cf. p. 120.

**ita** (adv.): in this manner, thus. **itaque** (conj.): and so, accordingly, for that reason, consequently.

**itch-causing**: *pruriens* (part. B). **Iter** (s.n. III): journey, q.v.

**iterum** (adv.): again, a second time, once more; *iterum atque iterum*, again and again. **itidem** (adv.): likewise. **itinerarius** (adj. A): relating to journeys or travelling; *unio itineraria*, society or club to promote exploration and travel.

**Iulus**: *see JULUS*. **ivory-white**: *eburneus* (adj. A).

## J

**jam** (adv.), **iam** (adv.): now, at present, already, till now. **jamdudum** (adv.): long before, a long time ago.

**Jelly**: gelatina (s.f. I), substantia (s.f. I) *gelinea*.

**jelly-like**: *gelineus* (adj. A), *gelatinus* (adj. A), *tremelloideus* (adj. A).

**Jodum** (s.n. II): iodine, q.v.

**Join** (union): junctura (s.f. I); *stamina ad corollae tubi cum ovario juncturam inserta*, stamens at junction of tube of corolla with ovary inserted; *joined*: *junctus* (part. A), *colligatus* (part. A), *conferruminatus* (part. A), *conjunctus* (part. A), *confliatus* (part. A), *consociatus* (part. A).

**Joint**: articulus (s.m. II). **jointed**: *articulatus* (part A); cf. ARTHRO-, GENICULATUS. 235, 455

**Journal**: diarium (s.n. II); cf. ACTA.

**Journal**: iter (s.n. III), *gen. sing. itineris*, *abl. sing. itinerem*; *hepaticae amazonicae et andinae quas in itinere suo per tractus montium et fluviorum Americanae aequinoctialis decerpserit R. Spruce*, liverworts Amazonian and Andean which R. Spruce in his journey through the region of mountains and rivers of Equatorial America gathered; cf. ITINERARIUS.

**Juba** (s.f. I): panicle of grasses, *lit. 'mane'*; *juba 2-pedalis stricta sicca grisea*, panicle 2-feet long narrow when dried grey. **jubatus** (adj. A): maned (i.e. with mane-like appearance).

**Judex** (s.c. III): judge; *me judice*, in my judgment, with me as judge.

**Judicium** (s.n. II): judgment, decision, opinion; cf. OPINION.

**Jugatus** (adj. A): yoked together, in pairs; *trijugatus*, with three pairs. **Jugum** (s.n. II): pair, ridge, chain of mountains. *-jugus* (adj. A): in *L. comp.*, -paired

**Juice**: succus (s.m. II), *abl. sing. succo*; *herbae succo croceo praeditae*, herbs with juice saffron-coloured provided. **juicy**: *succidus* (adj. A), *succosus* (adj. A). **juiceless**: *exsuccus* (adj. A).

**Julaceus** (adj. A); *Julaceous*, smoothly cylindrical, catkin-like, bearing catkins. **Julus** (s.m. II): catkin.

**Juncetum** (s.n. II): rushy place. **juncetus** (adj. A): rush-like, made of rushes. **juncifolius** (adj. A): rush-leaved. **juncosus** (adj. A): full of rushes.

**Junctura** (s.f. I): join, joint, uniting. **junctus** (part. A): joined, united, connected together.

**just**: *admodum* (adv.), *modo* (adv.). **just as**: *sicut* (adv.).

**juste** (adv.): rightly, duly, justly. **justus** (adj. A): rightful, true, just.

**utting out**: *procurrens* (part. B), *projectus* (part. A), *extans* (part. B).

**juvenalis** (adj. B): youthful, juvenile, pertaining to Port Juvenal near Montpellier, e.g. Godron's *Florula Juvenalis* (1854). **juvenilis** (adj. B), **juvenis** (adj. B): young, youthful. **Juventus** (s.f. III. ii): season of youth, youth, youthful state.

**juxta** (adv. and prep. with acc.): near, nearby, by the side of, next to, very near, approaching.

## K

**Kalium** (s.n. II): potassium.

**Keel**: carina (s.f. I), *acc. sing. carinam*, *gen. sing. carinae*, *abl. sing. carina*; *carina rectiuscula vel incurva, apice obtusa vel acuta*, keel almost straight or incurved, at the tip blunt or acute; *carinae obtusae petala dorso apice conata*, of the blunt keel the petals on the back at the tip joined; *corolla alba carina alas longitudine aequante extus pilosa*, corolla white with the keel equalising the wings in length outside pilose; *corolla bicolor, ad vexilli basim et ad carinae apicem violacea*, corolla two-coloured, at the base of the standard and at the tip of the keel violet; *carinae lamina purpurea unguem suum albidum longitudine aequans*, of the keel the purple lamina its whitish claw in length equalising, keeled: *carinatus* (adj. A) 'provided with a keel', *carinalis* (adj. B) 'relating to the keel'. **keelless**: *ecarinatus* (adj. A).

**Keeper**: custos (s.c. III).

**keeping back**: *retinens* (part. B). **keeping together**: *continens* (part. B). **kept**: *conservatus* (part. A), *asservatus* (part. A).

**kermesinus** (adj. A): crimson.

**Key** (statement of contrasting characters): *clavis* (s.f. III. vii), *abl. sing. clave*. **Key** (indehiscent winged fruit): *samara* (s.f. I), *abl. sing. samara*.

**kidney-shaped**: *reniformis* (adj. B) (*used of outlines and flat objects*), *nephroideus* (adj. A) (*used of solid objects*).

**killling**: *enecans* (part. B), *funestus* (adj. A); in *L. comp.*, -cidus, in *Gk. comp.*, -tonus.

**kindly**: *benevole* (adv.).

**Kingdom**: *regnum* (s.n. II).

**kinky**: *crispus* (adj. A).

**knee-jointed, kneeed**: *geniculatus* (adj. A).

**knobbed**: *torulosus* (adj. A). **knobby**: *nodosus* (adj. A). **knob-like**: *gongyloides* (adj. B); cf. *UMBONATUS*. 62

knot-like: *gangliiformis* (adj. B).  
known: *cognitus* (part. A).

## L

**Labellum**: *labellum* (s.n. II), *abl. sing. labello*, *nom. pl. labella*, *abl. pl. labellis*; *labellum orbiculare flabellatum vel ellipticum apice excisum 2-3 mm. latum multinervosum basi ante ostium callo instructum*, *labellum orbicularis* fan-shaped or elliptic at the tip cut out (notched) 2-3 mm. broad many-nerved at base in front of the opening with a thickening provided; *labellum ex ungue brevissimo ambitu ovatum obscure quadrilobatum, lobulis lateralibus quam intermediis majoribus, omnibus rotundatis*, *labellum* from a very short claw in outline ovate obscurely four-lobed, with the lateral lobules than the middle ones larger, all of them rounded.

**labiatus** (adj. A): lipped, used of corolla tubular at base but expanded above into one or two lips. 68

**labilis** (adj. B): slippery, perishable.

**labiosus** (adj. A): large-lipped, with well developed labium. *Labium* (s.n. II): labium, lower lip of corolla.

**labyrinthine**: *labyrinthinus* (adj. A), *daedaleus* (adj. A) (*from Daedalus, mythical builder of the Cretan labyrinth*) 'marked with sinuous intricate lines', *labyrinthiformis* (adj. B) 'irregularly bent and crumpled'.

**Lac** (s.n. III. ii): milky juice; *see LATEX*.

**laccatus** (adj. A): looking as if varnished.

**lacerate**: *lacerus* (adj. A), *laceratus* (part. A). 189

**lachno-**: in *Gk. comp.*, woolly; *lachnospermus*, with woolly seeds.

**Lacinia**: *lacinia* (s.f. I), *abl. sing. lacinia*, *nom. pl. laciniae*, *abl. pl. lacinii*, *lit. 'flap of garment'*. *laciniatus* (adj. A): slashed into narrow divisions with taper-pointed incisions. *laciniifolius* (adj. A): *laciniate-leaved*. 191

**lacinius** (adj. A): very laciniate. *Lacina* (s.f. I): *lacinula*, a small or fine *lacinia*.

**lacking**: *destitutus* (part. A), *carens* (part. B), *nullus* (adj. A), *demptus* (part. A), *deficiens* (part. B); cf. *ABSENCE*, *DEEST*.

**Lacrima** (s.f. I), *Lacryma* (s.f. I): tear-drop; *lacryma Jobi*, tear of Job. *lacrimiformis* (adj. B): tear-shaped, obovoid, i.e. solid and more or less obovate in outline. 12

**lactaneus** (adj. A), *lacteus* (adj. A), *lactineus* (adj. A): milky, milk-white, white with a blue tinge. *lactarius* (adj. A): milky, made of milk. *lacti-*: in *L.*

*comp.*, milk, milky, referring either to milky colour or production of latex. *lactifer* (adj. A): milk-producing; *see GAL-*, *MILK-*.

**Lactose**: *lactosum* (s.n. II), *gen. sing. lactosi*.

**Lacuna** (s.f. I): *lacuna*, air-space in tissue, depression in lichen-thallus, pool, pond. *lacunosus* (adj. A): covered with depressions, pitted with shallow holes larger than those described as *alveolate*. 249

**Lacus** (s.m. IV): lake; *habitat in fundo lacuum*, it inhabits the bottom of lakes; *in lacibus Sueciae, Borussiae*, in lakes of Sweden and Prussia. *lacuster*, *lacustris* (adj. B): inhabiting lakes.

**ladder-like**: *scalariformis* (adj. B), *scalaris* (adj. B).

**laden**: *onustus* (adj. A).

**Laesio** (s.f. III): damage, injury, wound, lesion. *laesus* (part. A): damaged.

**laetus** (adj. A): cheerful, pleasant, bright.

**laete** (adv.): lightly, not severely, brightly.

**laevigatus**, *levigatus* (adj. A): smooth and polished. 296

**laevis**, *levis* (adj. B): smooth, free from unevenness, hairs or roughness. 295

**laevulose**: *laevulosum* (s.n. II), *gen. sing. laevulosi*.

**lageniformis** (adj. B): flask-shaped; cf. *RETORT-CELL*.

**lago-**: in *Gk. comp.*, hare-, mostly with reference to rough furriess like a hare's foot; *lagopus*, *lagopodus*, hare-footed.

**Lake**: *lacus* (s.m. IV), *q.v.*

**Lamella** (s.f. I): thin plate of tissue, gill, q.v. *lamellaris* (adj. B), *lamellatus* (adj. A), *lamellosus* (adj. A): lamellate, composed of or arranged in layers or thin plates. *Lamellula* (s.f. I): lamellule, a short gill not reaching the stipe.

**Lamina** (s.f. I): blade; *lamina vitrea*, glass slide. *laminiformis* (adj. B), *laminaris* (adj. B): blade-like.

**lampro-**: in *Gk. comp.*, bright, lustrous, shining.

**Lana** (s.f. I): wool. *lanatus* (adj. A): woolly. 276

**lanceatus** (adj. A): lanceolate (in sense of A. P. de Candolle and Lindley).

**lanceolate**: *lanceolatus* (adj. A); a term of varied application; *lanceolatus*, 'armed with a little lance or point', as used by all authors represents a comparatively narrow shape with curved sides tapering to a pointed end; in Linnaeus's sense, a shape broadest at the middle and tapering to each end, typified by *Plantago lanceolata* (with length to breadth roughly 6 to 1) i.e. very narrowly elliptic; in the sense of

A. P. de Candolle, Lindley and many German authors, a shape broadest at the middle, tapering to each end with length to breadth about 3 to 1, i.e. narrowly elliptic; in the sense of Bentham, A. Gray and most English-speaking authors from 1865 onwards, a shape broadest below the middle with length to breadth about 3 to 1. For discussion, see Alphonse de Candolle, *Phytographie*, 198-200 (1880). 106

**lanci-**: in *L. comp.*, lanceolate; *lancifolius*, with lanceolate leaves; *lancibris*, with lancolate lip; *lancipetalus*, with lanceolate petals.

**Land**: *terra* (s.f. I). *Land*: *terrestris* (adj. B), in *Gk. comp.*, *geo-*.

**lanes** (adj. A): woolly, wool-like.

**language**: *lingua* (s.f. I).

**langueſcens** (part. B): wilting, withering.

**lani-**: in *L. comp.*, woolly; *lanicalulis*, with woolly stems; *laniger*, wool-bearing. *lanosus* (adj. A): woolly.

**languinosis** (adj. A): woolly, downy.

**lapidescens** (part. B): becoming stone-hard, petrifying. *lapideus* (adj. A): stone-hard, made of stone. *lapidosus* (adj. A): full of stones, stony. *Lapis* (s.m. III. ii): stone.

**Lappa** (s.f. I): bur. *lappaceus* (adj. A): bur-like.

**Lapsus** (s.m. IV): fall, shedding; *calyx post lapsum fructus persistens*, calyx persisting after fall of the fruit.

**Laqueus** (s.m. II): noose, snare; *laquei hyphales*, hyphal snares.

**large**: *grandis* (adj. B), *magnus* (adj. A), *amplus* (adj. A). *large-*: in *L. comp.*, *grandi-*, *magni-*, in *Gk. comp.*, *macro-*, *mega-*, *megalos*. *largely*: *magnopere* (adv.).

**largus** (adj. A): abundant, plentiful, abounding.

**lasi-, lasio-**: in *Gk. comp.*, hairy, woolly; *lasiandrus*, with woolly stamens; *lasiantherus*, with woolly anthers; *lasianthus*, with woolly flowers; *lasiobotrys*, with woolly racemes; *lasiocalyx*, with woolly calyx; *lasiocarpus*, with woolly fruit; *lasiocladus*, with woolly twigs or shoots; *lasiogynus*, with woolly pistil; *lasioneurus*, with woolly nerves; *lasiophlebus*, with woolly veins; *lasiophyllus*, with woolly leaves; *lasiorrhynchus*, with woolly snout or beak; *lastosiphon*, with woolly tube; *lasiostemon*, with woolly stamens; *lasiostylus*, with woolly style.

**last**: *extremus* (adj. A), *postremus* (adj. A), *ultimus* (adj. A). *at last*: *demum* (adv.), *ad postremum* (adv.). *lastly*: *denique* (adv.), *postremo* (adv.).

**late**: *serotinus* (adj. A): *see SLOW*.

**late** (adv.): broadly, widely.

**later**: *postea* (adv.), *demum* (adv.) 'at last', *tandem* (adv.) 'at last'.

**lateral**: *lateralis* (adj. B). 457

**lateri-**: in *L. comp.*, at the side, lateral to; *lateralifolius*, on the side of a leaf at the base.

**lateritus**, *latericius* (adj. A): dark brick red, like old red tiles.

**Latex**: *latex* (s.m. III. i), *abl. sing. latice*; *lac* (s.n. III. ii), *abl. sing. lacte*; *herba latice flavo*, herb with yellow latex; *latex copiosus albus immutabilis*, latex abundant white not changing.

**lati-**: in *L. comp.*, broad, wide; *latibasis*, with broad base; *latibracteatus*, with broad bracts; *latifolius*, broad-leaved; *latilabris*, broad-lipped; *latilobus*, with broad lobes; *latipes*, with broad foot or stalk; *latisectus*, cut into broad divisions; *latisepalus*, broad-sepaled; *latistipulatus*, with broad stipules.

**latinus** (adj. A): Latin; *lingua latina*, the Latin language; *latine*, in Latin.

**Latitude**: *latitudo* (s.m. III).

**latrorus** (adj. A): directed towards the sides, along the sides.

**latticed**: *cancellatus* (adj. A), *clathratus* (adj. A). 243

**latus** (adj. A): broad, wide.

**Latus** (s.m. III. iv): side, flank: *ligula apice et lateribus ciliata*, ligule at the tip and the sides ciliate.

**lavandulaceus**, *lavandulus* (adj. A): lavender-violet.

**laxe** (adv.): loosely. **laxi-**: in *L. comp.*, loose. **laxus** (adj. A): flaccid, loose, i.e. with parts distinct and apart from one another or in an open or loose arrangement. 315, 480

**Layer**: *stratum* (s.n. II), *abl. sing. strato*, *nom. pl. strata*, *abl. pl. stratis*; *testa e stratis tribus formata stratum exterius tenuissimum, medium fibrosum, interius spongiosum*, testa from layers three formed, the outer one very thin, the middle one fibrous, the inner one spongy; *stratum filamentorum laxe intricatorum tenuie viride vel rubescens mucosum*, layer of loosely entangled filaments thin green or reddish slimy.

**Layer** (used in vegetative propagation): *propago* (s.f. III), *gen. sing. propaginis*. **layered**: in *L. comp.*, *-stratus* (adj. A), in *Gk. comp.*, *-stromaticus*; *unistratus*, *monostromaticus*, one-layered; *bistratus*, *distromaticus*, two-layered; *tristratus*, *tristromaticus*, three-layered; *paucistratus*, *oligostromaticus*, few-layered; *multistratus*, many-layered.

**Lead**: *plumbum* (s.m. II). **leaden**: *plumbus* (adj. A). **leaden-grey**: *molybdeus* (adj. A).

**Leaf:** folium (s.n. II), *abl. sing.* folio, *nom. pl.* folia, *gen. pl.* foliorum, *abl. pl.* foliis; *folium basale solitarium lineare vel lanceolatum planum acutum 6-9 poll. longum 3-4 lin. latum*, leaf basal solitary linear or lanceolate flat acute 6-9 inches (15-23 cm.) long 3-4 lines (7-9 mm.) broad; *folia caulinis opposita, suprema 4-6 saepe valde conferta, in eodem pari subaequimagna usque valde inaequimagna et inaequilongae petiolata, plus minus orbicularia, basi rotundata vel cordata margine integro dense ciliata, apice obtusissima, e basi 3-nervia, supra in facie subtus ad nervos pilosa*, leaves caulinis opposite, the upper 4-6 often very much crowded together, in the same pair almost equal in size to very unequal in size and unequally stalked, more or less circular, at base rounded or cordate, at the entire margin densely ciliate, at the tip extremely blunt, from the base 3-nerved, above on the face below at the nerves pilose; *folia basi ad ½ latitudinis imbricata, angulo fere recto divergentia, subdupo longiora quam lata, in dimidio supero lingulata*, leaves at base for ½ of width imbricate, almost at a right angle diverging, almost twice as long as broad, in the upper half lingulate; *folia alterna, ambitu ovata, usque ad 9 cm. diametro, ad basin trisecta*, leaves alternate, in outline ovate, up to 9 cm. in diameter, to the base three-cut; *foliorum basarium atque caulinorum infimorum petioli laminam circiter aequantes, of basal and lower caulinis leaves the petioles about equaling the blade; caulis e basi per 20 cm. nudus, cum foliis 4 brevibus remotis, postremo verticillis foliorum usque 8-foliatis vestitus*, stem from base upwards for 20 cm. naked, then with leaves 4 short remote, finally with whorls of leaves up to 8-leaved clothed; *foliis parvis ovatis hirsutis atroviridis*, with leaves small ovate hairy dark green; **leaf-bearing:** foliifer (adj. A), foliatus (adj. A). **leaf-like:** foliiformis (adj. B).

**Leafing:** frondescencia (s.f. I), *acc. sing.* frondescientiam; *folia saepius vere ante frondescientiam novam cadunt*, the leaves most often in spring drop off before the production of new foliage.

**leafless:** aphyllus (adj. A), foliis carens (part. B with *abl.*).

**Leaflet:** foliolum (s.n. II), *abl. sing.* foliolo, *nom. pl.* foliola, *gen. pl.* foliolorum, *abl. pl.* foliolis.

**leafy:** frondosus (adj. A), foliaceus (adj. A), foliosus (adj. A). 59

**leaning:** inclinatus (part. A).

**learned:** doctus (part. A), eruditus (part. A), peritus (adj. A). **least:** minimus (adj. A). **at least:** minimum (adv.); saltem (adv.), quidem (adv.), ut minimum (adv. phrase). **leather-coloured:** alutaceus (adj. A). **leathery:** coriaceus (adj. A). 312 **leaved:** in *L. comp.*, -folius, -foliatus, in *Gk. comp.*, -phyllus. **lebetiformis** (adj. B): basin-shaped, bowl-shaped. **lecanorinus** (adj. A): having light-coloured margin of apothecium formed by thallus, as in the lichen genus *Lecanora*. **lecedeinus** (adj. A): having apothecia, as in the lichen genus *Lecidea*, with dark-coloured excipulum proprium. **Lectotype:** lectotypus (s.m. II). **lectus** (part. A): collected, picked, selected. **Lectus** (s.m. II): bed, couch, bulb-plate. **leek-green:** porraceus (adj. A), prasinus (adj. A). **left behind:** relictus (part. A). **legitimus** (adj. A): allowed by the law, proper, genuine, legitimate. **Legume:** legumen (s.n. III. vi), *abl. sing.* legumine, *nom. pl.* legumina, *abl. pl.* leguminibus; *legumen rectum lineare sesquipollicare calyx persistente cinctum 6-8-spermum dorso carinatum*, legume straight linear 1½ inches long by the persistent calyx surrounded 6-8-seeded on the back keeled; *legumen oblongum obliquum, rarius falcatum, membranaceum coriaceum carnosum vel durum, indehiscens vel bivalve, intus continuum vel inter semina farctum vel septatum*, legume oblong oblique, rarely falcate, membranous leathery fleshy or hard, indehiscent or two-valved, inside continuous or between the seeds filled or septate; *legumen incurvum crassum exalatum subcompressum, epicarpio fragili, mesocarpio pulposo, endocarpio coriaceo*, legume incurved thick wingless somewhat compressed, with the epicarp brittle, the mesocarp pulpy, the endocarp leathery; *legumen sessile vel stipitatum, teres vel turgidum vel inflatum, ad suturam superiorem incrassatum*, legume sessile or stipitate, terete or swollen or inflated, at the upper suture thickened; *legumine subgloboso vel ovoideo glabro vel piloso (pilis albis copiose tecto) inermi vel spinoso indehiscens vel tardius bivalvi*, with the legume almost globose or else ovoid glabrous pilose (with white hairs plentifully covered) unarmed or spiny indehiscent or at length two-valved; *leguminibus horizontaliter patentibus linearibus imperfecte bilocularibus, calyx membranaceo persistente quinque longi*.

*oribus in dorso carinatis, in ventre convexis, c. 5 cm. longis 5 mm. latis, with legumes horizontally spreading linear incompletely bilocular, than the membranous persistent calyx five times longer, on the back keeled, on the lower side convex, about 5 cm. long 5 mm. broad.* **leguminaceus** (adj. A): having the character of a legume. **leguminosus** (adj. A): legume-bearing.

**lei, leio-:** in *Gk. comp.*, smooth; *leianthus*, smooth-flowered.

**Lemma:** lemma (s.n. III), valva (s.f. I) gluma (s.f. I) florens; *lemma spiculam aequans, erectum, 3-nerve, lemma equalis spikelet, erect, ovate, 3-nerved; lemmata erecta oblonga, ciliata, lemmas erect oblong ciliate*.

**lemon-coloured:** citrinus (adj. A). **lemon-scented:** citriodorus (adj. A).

**Length:** longitudo (s.f. III. vi), *abl. sing.* longitudine; *pro longitudine*, for the length; *per totam longitudinem rhachidis*, over the whole length of the rachis.

**lengthened:** protensus (part. A), elongatus (adj. A). **lengthwise:** longistrorum (adv.), in longitudinem, longitudinaliter (adv.); *rami longistrorum sulcati*, branches lengthwise furrowed.

**leniter** (adv.): gently, mildly, gradually.

**Lens:** lens (s.f. III) *gen. sing.* lentis, *abl. sing.* lenti or lente; *sub lente*, under a lens (the usual expression of eighteenth-century authors is, however, *oculo armato*); *perithecia aculeis (vix oculo armato manifestis at ope microscopii compositi perspicuis) obruta*, perithecia with prickles (hardly evident under a lens but with the help of the compound microscope quite clear) covered. **lens-shaped:** lenticularis (adj. B), lentiformis (adj. B).

**lente** (adv.): slowly, leisurely.

**Lenticel:** lenticella (s.f. I), *abl. pl.* lenticellis.

**lenticularis** (adj. B), **lentiformis** (adj. B): lens-shaped, i.e. resembling a double convex lens. 18

**lentiginosus** (adj. A): freckled. 304

**lentus** (adj. A): pliant, flexible, sluggish, thick-flowing, viscous.

**lerido-:** in *Gk. comp.*, scale-, scaly. **lepidotus** (adj. A): covered with small scales.

**leprosus** (adj. A): having a scurfy appearance, 'spotted like a leper' (Berkenhout), *lit.* 'leprosus'.

**lept, lept-:** in *Gk. comp.*, slender, thin, narrow; *leptanthus*, slender-flowered; *leptocarpus*, slender-fruited; *leptochilus*, narrow-lipped; *leptocladus*, with slender shoots; *leptodermaticus*, *leptodermicus*.

*leptodermus*, thin-skinned, the wall of the cell thinner than the cavity; *leptodictyus*, with a fine network; *leptogrammus*, with fine or narrow markings; *leptolobus*, with slender, small or delicate parts; *leptoneurus*, fine-nerved; *leptopetalus*, slender-petaled; *leptophyllus*, slender-leaved; *leptopterus*, narrow-winged; *leptopodus*, with slender petiole; *leptorrhizus*, with slender rhizome.

**lesiniformis** (adj. B): awl-shaped.

**Lesion:** laesio (s.f. III).

**less:** minor (adj. B; comp. of *parvus*): *ramuli minores*, lesser branches; *strato minus quam 10 µ crasso*, with layer less than 10 µ thick; **less:** minus (adv.); **-less:** expressed sometimes by addition of prefix *ex-* or *e-* to adj. or prep. *sine* with *abl.* of noun.

**lethalis** (adj. B): lethal, deadly.

**Letter** (of alphabet): littera (s.f. I).

**Letter** (epistle): litterae (s.f. I pl.), epistola (s.f. I).

**leuc,** **leuco-:** in *Gk. comp.*, white-. Associated with colour terms it indicates paleness; *leucacanthus*, with white spines or prickles; *leucanthus*, white-flowered; *leucocarpus*, white-fruited; *leucocladus*, with white shoots; *leuconotus*, white-backed; *leucopetalus*, white-petaled; *leucophaeus*, pale grey; *leucophlebius*, white-veined; *leucophyllus*, white-leaved; *leucospermus*, white-seeded; *leucotaenius*, white-banded.

**level:** planus (adj. A); cf. **PLAIN**. **levelled:** deplanatus (part. A), aequatus (part. A). 259

**leviter** (adv.): lightly, mildly.

**Liane:** liana (s.f. I).

**Libellus** (s.m. II): booklet, pamphlet; *in hoc libello*, in this pamphlet.

**Liber** (s.m. II): inner bark of a tree, book.

**liber** (adj. A): free, not joined together; *styli liberi vel connati*, styles free or united. **liberatus** (part. A): set free, released. **libere** (adv.): freely, without restraint. 451

**liberated:** liberatus (part. A).

**Lichen:** lichen (s.m. III), *gen. sing.* lichenis, *nom. pl.* lichenes, *gen. pl.* lichenum, *abl. pl.* lichenibus.

**Lid:** operculum (s.n. II), *abl. sing.* operculo; *ascidii operculum ascendens ovatum, facie inferiore prope apicem appendice instructum, basim versus carinatum*, of the pitcher the lid ascending ovate, on the lower surface near the tip with an appendage provided, towards the base keeled. **lidded:** operculatus (adj. A).

**Life:** vita (s.f. I).

**Light**: lux (s.f. III), gen. sing. lucis, *abl.* sing. luce; cf. TRANSMITTED.

**light**: dilutus (part. A), pallidus (adj. A). **lightly**: laete (adv.), modice (adv.), leviter (adv.).

**lignatilis** (adj. B): growing on wood.

**lignescens** (adj. B): becoming woody.

**ligneus** (adj. A), **lignosus** (adj. A): woody, wooden, ligneous, made of wood. **Lignum** (s.n. II): wood; *arbor ligno duro albo*, tree with wood hard white. 325

**ligulate**: ligulatus (adj. A). 105

**Ligule**: ligula (s.f. I), *lit.* 'a little tongue', nom. pl. ligulae, *abl.* pl. ligulis; *ligula linea brevior truncata ciliata*, ligule than a line ( $\frac{1}{12}$  inch) shorter truncate ciliate; *ligulae ad marginem ciliolatum redactae*, ligules to a ciliolate margin reduced; *ligulae anguste oblongae truncatae scaricosaes*, ligules narrowly oblong truncate scarious; *corollae radii ligulatae*, *ligula brevi obovata* corollas of the radius (i.e. ray-florets) ligulate, with ligula short obovate.

**liguliforous** (adj. A): having a capitulum of only ligulate florets.

**like**: similis (adj. B, followed by dat. or gen.), ad instar (with gen.).

**Likeness**: similitudo (s.f. III. vi).

**likewise**: item (adv.), itidem (adv.), similiter (adv.), simili modo ac.

**Illicinus** (adj. A): lilac, i.e. 'pale dull violet mixed a little with white' (Lindley) but with more red in it and nearer purple than *lavandulaceus*, which has more blue and is nearer violet, both being greyed and light.

**liliaceus** (adj. A): lily-like; *flos liliaceus*, flower bell-shaped or funnel-shaped with six perigon segments.

**lilliputianus**, *lilliputianus* (adj. A): small enough to inhabit the land of Lilliput in Swift's *Gulliver's Travels* (applied to species of *Lejeunea*, *Harposporium*, *Veronica*, etc.).

**Limb**: *limbus* (s.m. II); *limbus corollae* *pelviformis*, *mutabilis*, in *aestivatione* *ruber*, sub *anthesi* *violaceus* et *priusquam* *corolla* *decidit* *caeruleus*, 15 mm. *latus*, limb of corolla saucer-shaped, changeable, in bud red, at anthesis violet and before the corolla falls blue, 15 mm. broad.

**limbalis** (adj. B): applied to connecting marginal nerve of anastomosing nerves of leaves.

**limbatus** (adj. A): bordered, i.e. with one colour edged by another more broadly than in *marginatus*.

**Limbidium**: *limbidium* (s.n. II), *abl.* sing. *limbidio*.

**Lime**: *calx* (s.f. III), gen. sing. *calcis*, *abl.* sing. *calce*; *fila pulvinos calce induratos*

*foriantia*, filaments forming cushions hardened by lime; *stratum calce incrassatum*, layer by lime encrusted; *ad terram calcariam*, on calcareous ground; *planta calcaria carbonica zonatum incrassata*, plant by calcium carbonate in bands encrusted; *filis carbonate calcario saepe incrassatis*, with filaments by calcium carbonate often encrusted.

**Limes** (s.m. III): boundary, limit.

**Limestone**: *saxum* (s.n. II) *calcareum*; *calcarius* (s.m. II) *densus*.

**limi-**: in *L. comp.*, pertaining to mud, mud-; *limicola*, a dweller on mud.

**limitatus** (part. A): bounded, limited, bordered, enclosed within limit.

**limn-**: in *Gk. comp.*, pertaining to standing water, pools, lakes; *limnophilus*, pond-loving.

**limosus** (adj. A): muddy, growing in muddy places. **Limus** (s.m. II): mud, slime.

**limpidus** (adj. A): clear, transparent.

**Line** (s.f. I): line,  $\frac{1}{12}$  inch; English line, 2-1 mm., French line 2-3 mm.

**linear**: *linearis* (adj. B). 103

**linearifolius** (adj. A): linear-leaved.

**lineatus** (adj. A), *lineolatus* (adj. A): marked by fine parallel lines. 255

**Lingua** (s.f. I): tongue, language.

**linguiformis** (adj. B), *lingulatus* (adj. A): tongue-shaped. 39

**linifolius** (adj. A): flax-leaved.

**linked**: *concatenatus* (part. A); cf. JOINED.

**linquens** (part. B): leaving, departing from.

**Lip**: *labium* (s.n. II), *abl.* sing. *labio*.

**lipped**: *labiatus*, in *Gk. comp.*, -chilus, -cheilus.

**liquefens** (part. B): becoming liquid.

**Liquidum** (s.n. II): liquid.

**liquidus** (adj. A): clear.

**Lirella**: *lirella* (s.f. I), *abl.* sing. *lirella*.

**lirellatus** (adj. A): provided with lirellae. *lirellinus* (adj. A): long and narrowly furrowed.

**lith-**, **litho-**: in *Gk. comp.*, stone-; *lithophilus*, loving stones; *lithospermus*, with seeds hard as stone.

**litoralis** (adj. B): see LITTORALIS.

**Litterae** (s.f. I pl.): letter of alphabet. *Litterae* (s.f. I pl.): letter, epistle, letters of alphabet; in *litteris*, in a letter.

**little**; **parvus** (adj. A), *minutus* (adj. A). **very little**: *minimus* (adj. A); **extremely little**: *minutissimus* (adj. A).

**littoralis** (adj. B), *litoralis* (adj. B), *littoreus* (adj. A): pertaining to the sea-shore.

**Litus** (s.n. III), *Litus* (s.n. III): sea-shore, beach, bank.

**Litura** (s.f. I): irregular blurred fleck or marking.

**lividus** (adj. A): livid, a vague term which 'may be defined as the peculiar livery effect of adding grey and black to the range of hues between blue and red' (H. A. Dade), originally a blue or leaden colour.

**living**: *vivens* (part. B), *vivus* (adj. A): in *statu vivo*, in a living state: cf. INHABITING.

**lobatus** (adj. A): lobed. 193

**Lobe**: *lobus* (s.m. II), *abl.* sing. *lobo*, nom. pl. *lobi*, *abl.* pl. *lobis*; *folia lobis* *lateralibus* *triangularibus* *acutis integris*, *lobo terminali hastato parvo acuto*, leaves with lateral lobes well apart triangular acute entire, terminal lobe hastate small acute. **lobed**: *lobatus* (adj. A); in *L. comp.*, -lobus; *parvilibulus*, with small lobes; *trilibulus*, three-lobed.

**lobule**: *lobulus* (s.m. II): *abl.* sing. *lobulo*, nom. pl. *lobuli*, *abl.* pl. *lobulibus*; *folia imbricata*, *supra lobulum semierectum divergentia*, leaves imbricate, above the half-erect lobule diverging; *lobulo ovoido turgido*, with lobule ovoid swollen.

**localis** (adj. B): local, belonging to a given place; *varietates locales speciei*, local varieties of the species.

**Locality**: *locus* (s.m. II), nom. pl. *loci*, 'single places', or *loca*, 'connected places, regions'.

**located**: *locatus* (part. A).

**locellatus** (adj. A): locellate, divided into small secondary compartments. **Locellus**: *locellus* (s.m. II), nom. pl. *locelli*, *abl.* pl. *locellis*; *loculi antherarum in locellis 2 divisi*, loculi of anthers in 2 locelli divided.

**locularis** (adj. B), *loculatus* (adj. A): having cavities or loculi; *plurilocularis*, with many loculi. **loculicidate** (adv.): loculicidally. **loculicidus** (adj. A): splitting down the back of loculus or chamber, not at the septa; see SEPTICIDALIS. **loculosus** (adj. A): divided internally into cells or by partitions.

**Loculus**: *loculus* (s.m. II), *abl.* sing. *loculo*, nom. pl. *loculi*, *abl.* pl. *loculibus*; *loculi biovulati*, *ovulis collateralibus*, chambers [of ovary] two-ovuled, with the ovules side by side; *pori nectariferi cum loculis alternantes*, nectar-pores with loculi alternating; *ovarium 3-loculare*, *ovulis in quoque loculo solitarius vel paucis*, ovary trilocular, with ovules in each loculus solitary or few; *semina in loculis contigua*, loculum arcte impletia, seed in the loculi touching, the loculus tightly filling; *antherarum loculi paralleli contigui*, *poro terminali dehiscentes*,

of the anthers the loculi parallel touching, by a terminal pore dehiscing. 240

**Locus** (s.m. II): place, locality.

**Locusta** (s.f. I): spikelet of a grass.

**Lodicule**: *lodicula* (s.f. I), *abl.* pl. *lodiculis*, lit. 'a small blanket, coverlet'; *glumella* (s.f. I), *abl.* pl. *glumellis*; *lodiculae duae hyalinae truncatae vel bilobatae glabrae*, 1-3 mm. *longae*, lodicules 2 hyaline truncate or 2-lobed glabrous 1-3 mm. long.

**lofty**: *celsus* (adj. A), *excelsus* (adj. A), *exaltatus* (part. B). 340

**-logia** (s.f. I): in *Gk. comp.*, study of (from *λόγος*, discourse); *agrostologia*, study of grasses; *botanologia*, botany, study of plants; *bryologia*, study of mosses; *crocologia*, study of crocuses (used by Hertodt for a treatise on saffron); *mycologia*, study of fungi; see CURIOUS.

**loment-**: in *Gk. comp.*, fringed, bordered.

**Loment**: *lomentum* (s.n. II). *lomentaceus* (adj. A): bearing or resembling a loment.

**long**: *longus* (adj. A): *folium 3 pollices longum*, leaf 3 inches long; *folio longo*, with the leaf long; *foliis longis*, with leaves long; *folia ramulorum longorum ovata 3 cm. longa*, leaves of the long branchlets ovate 3 cm. long; *petiolum longus*, petiole long; *caules ad 30 cm. longi*, *ramis 10-20 cm. longis*, stems to 30 cm. long, with branches 10-20 cm. long. **long-**: in *Gk. comp.*, dolicho-, in *L. comp.*, longi-, longer: longior, longior, longius (adj. compar.). moderately long; longiusculus (adj. A). very long: longissimus (adj. A).

**longaevus** (adj. A): of great age, long-lived. **longe** (adv.): lengthwise, long, for a long time, at a distance; *longe lateque*, in length and breadth. **longi-**: in *L. comp.*, long-; *longialatus*, long-winged; *longibarbatus*, long-bearded; *longicalcaratus*, long-spurred; *longicalyx*, with long calyx; *longicaudus*, long-tailed; *longicaulis*, long-stemmed; *longicuspis*, with a long point or cusp; *longiflorus*, long-flowered; *longipetalus*, long-petalled; *longiracemosus*, with long racemes; *longisepalus*, long-sepalled; *longistylus*, long-styled. **longissimus** (adj. A); extremely long, *longistrorum* (adv.): lengthwise, longitudinally. **Longitudo** (s.f. III. vi): length, q.v.

**longinquo** (adv.): far off, a long way off.

**longitudinal**: *longitudinalis* (adj. B).

**longitudinally**: see LENGTHWISE.

**Longiturnitas** (s.f. III. ii): duration.

**longiusculus** (adj. A): moderately long, fairly long.

loose: *laxus* (adj. A) 'not crowded', *liber* (adj. A) 'free', *incohaerens* (part. B) 'not clinging together'. loosely: *laxe* (adv.) 315, 480

loph-, lopho-: in *Gk. comp.*, crest-, crested; *lophophorus*, crest-bearing, crested; *lophospermus*, with crested seeds.

loratus (adj. A), *loriformis* (adj. B): ligulate, strap-shaped, i.e. moderately long with the two margins parallel. 105

Lorica (s.f. I): lorica, entire siliceous covering of diatom cell, *lit.* 'leather cuirass'; *lorica simplex bivalvis silicea compressa*, *valvibus inaequalibus*, lorica simple 2-valved siliceous compressed, with valves unequal. *loricatus* (part. A): loricate, armoured with a hard scaly exterior.

*loriformis* (adj. B): see LORATUS.

love: *amo* (verb, conj. I): *amat umbras*, it loves shady places. *loving*: *amans* (part. B); in *Gk. comp.*, -philus.

low: *humilis* (adj. B), *demissus* (part. A); *aestus recessu*, at low tide. 337

lower: *infernus* (adj. A), *inferus* (adj. A), inferior (adj. compar.); *folia in eodem ramo quoad dispositionem variabilia*, *infima rosulata*, *inferiora remota*, *superiora c. 2 cm. distantia*, *summa conferta*, leaves on the same branch as regards arrangement variable, the lowermost in a rosette, the lower ones well apart, the upper 2 cm. apart from each other, the uppermost crowded together. lowermost: *infimus* (adj. A), *imus* (adj. A).

lubricus (adj. A): smooth and slippery. lucens (part. B): shining, polished, glistening.

lucidus (adj. A): shining, clear, transparent. Lncus (s.m. II): sacred thicket, wood. Inkewarm: *tepidus* (adj. A).

lumbricalis (adj. B), *lumbriciformis* (adj. B): worm-shaped. Lumen (s.n. III. vi): cavity or space within a cell, *lit.* 'light, opening'.

lumpy: *glebosus* (adj. A). lunaris (adj. B), *lunatus* (adj. A): crescent-shaped. *lunulatus* (adj. A): ornamented with little crescents, crescent-shaped. 124

luridus (adj. A): dirty brown, smoky yellow, drab yellow; sometimes confused in application with *lividus*. Lusus (s.m. IV): a sport or variant, *lit.* 'a game, something done as an amusement or joke'.

lutarius (adj. A), *lutensis* (adj. B): living in or on mud.

luteolus (adj. A): pale yellow, yellowish. *lutescens* (adj. B): becoming yellow, yellowish. *luteus* (adj. A): deep yellow,

golden-yellow, buttercup-yellow (H.C.C. 5). In general deeper than *flavus* and not verging to red as *croceus*; the name from *lütum*, weld, dyer's rocket (*Reseda luteola*); *luteus chromaticus*, chrome yellow (H.C.C. 60.5); *luteus ranunculinus*, buttercup-yellow (H.C.C. 5).

Lütum (s.n. II): mud.

Lux (s.f. III): light; cf. TRANSMITTED.

luxuriant: luxurians (part. B).

lying above; *superjectus* (part. A). lying beneath: *subjectus* (part. A). lying between: *interjectus* (part. A).

lyrate: *lyratus* (adj. A). 129

### M

macer (adj. A): thin, meagre.

maceratus (part. A): macerated, i.e. softened by soaking.

macilents (adj. A): thin, meagre.

macr-, macro-: in *Gk. comp.*, long, large, great; *macrandrus*, with large anthers; *macranthus*, large-flowered; *macroblastus*, with large embryo; *macrocalyx*, with large calyx; *macroglossus*, long-tongued; *macrophyllus*, large-leaved; *macropodus*, with large foot or support; *macrorhizus*, with large root or rhizome; *macrostomus*, wide-mouthed; *macrotrichus*, with long bristles.

Macrocyst; *macrocysta* (s.f. I).

Macrospora (s.f. I): macrospore, megaspore.

Macrosporangium (s.n. II): macrosporangium, megasporangium.

Macula (s.f. I): spot, blotch, mesh of network. *maculatus* (part. A): spotted, blotched. *maculiformis* (adj. B): spot-shaped. *maculosus* (adj. A): full of spots, mottled.

made: *factus* (part. A). made up of: *constatus* (part. A) (*followed by e or ex and abl.*), *compositus* (part. A).

madefactus (part. A): made wet, moistened, soaked; cf. MOISTENED. *madidus* (adj. A): moist, wet, soaked; cf. MOIST.

Mador (s.m. III): moisture, wetness.

maeandriformis (adj. B): meandriform, having an irregularly winding or meandering direction.

magentaeus (adj. A): magenta (H.C.C. 27), red-purple.

magis (adv.): more, more completely; *non magis quam*, not more than.

magini-: in *L. comp.*, large; *magnistipulus*, with large stipules; *magniguttatus*, having large oil globules.

Magnification: *magnificatio* (s.f. III); *magnificatione*, at a magnification.

magnified: *amplificatus* (part. A), *auctus*

(part. A); *folia oculo nudo vel negligenter perscrutanti glaberrima sed revera pilis minutis oculo armato aspectabilibus conspersa*, leaves to the naked eye or by careless examination quite glabrous but in fact sprinkled with minute hairs visible under the lens; *figurae octies auctae*, figures 8 times magnified; *semina sub lente reticulata*, seeds seen under the lens reticulate; cf. LENS.

Magnitudo (s.f. III. vi): size; *magnitudine naturali*, at natural size.

magnopere (adv.): greatly, strongly, extremely.

magnus (adj. A): big, great, large (compar. major; *superl.* maximus).

main: *principalis* (adj. B). mainly: *praecipue*.

major (adj. compar. of *magnus*): greater. making: *efficiens* (part. B), *faciens* (part. B), *formans* (part. B).

malachiteus (adj. A): malachite-green.

male: *mas* (adj. B). *gen. sing. maris, abl. sing. mare*, *gen. pl. marium, abl. pl. maribus*; *masculus* (adj. A); *masculinus* (adj. A); symbol ♂; *planta mascula tantum descripta*, male plant only described; *flores masculini*, flowers male; *flores hermaphroditii masculos aequantes*, flowers hermaphrodite male ones equalling.

male (adv.): badly, ill; *planta male descripta*, plant badly described.

malpighiaceus (adj. A): relating to or resembling *Malpighia*; *pili malpighiacei*, hairs attached at the middle with two stiff pointed radiating branches; cf. DIBRACHIATUS.

Malt: *malturn* (s.n. II), *gen. sing. malthi*; *cultura in extracto malthi*, culture on malt-extract.

Maltose: *maltosum* (s.n. II), *gen. sing. maltosi*.

malus (adj. A): bad.

malvaceus (adj. A): pertaining to mallow (*Malva*); *flos malvaceus*, flower with 5 clawed petals fused with staminal tube.

malvettinus (adj. A): mauvette (H.C.C. 5.37).

malvicolor (adj. B), *malvinus* (adj. A): mauve (H.C.C. 6.33).

Mamilla (s.f. I): nipple, teat, small projection. *mamillatus* (adj. A): mamillate, having small nipple-like projections.

*mamilliformis* (adj. B): nipple-shaped. *mammiformis* (adj. B): nipple-shaped. *mammosus* (adj. A): having large breasts, resembling a large nipple, as fruit of *Solanum mammosum*.

mancus (adj. A): defective, imperfect, as Hector Léveillé's descriptions of new species.

mandarinus (adj. A): mandarin-red (H.C.C. 17).

manifeste (adv.), manifesto (adv.): evidently, manifestly. *manifestus* (adj. A): evident, clear, apparent, manifest; cf. EVIDENT, PERCEPTEBLE, PHANER.

Manipulus (s.m. II): handful, bundle.

Manner: *modus* (s.m. II) (*with gen.*). Can also be expressed by *instar* (s. indecl.); *modus vitae*, manner of life; *in modum*, *ad modum*, *ad instar*, *more* (*with gen.*), after the manner.

Mantissa (s.f. I): make-weight, worthless addition, hence supplement.

Manubrium (s.n. II): a projecting cell in *Characeae*; the long more or less cylindrical base of a woody spathe (*cyma*) in palms, *lit.* 'a handle'; cf. *Gentes Herb.*, 7: 179 (1946).

Manure: see DUNG.

many: *multus* (adj. A), *numerous* (adj. A); *flores multi*, flowers many; *stoloni-bus numerosis*, with numerous stolons, as many as: *tot quot* (adj. indecl.); *corolla lobis tot quot sepalis*, corolla with lobes as many as the sepals; *stamina tot quot corollae lobi itaque opposita*, stamens as many as lobes of the corolla and opposite to these, just as many as: *totidem quot* (adj. indecl.); *laminis totidem quot undulationibus*, with just as many laminae as undulations.

many-: in *L. comp.*, *mult-*, *multi-*, in *Gk. comp.*, *poly-*, *multicolor*, *polychromus*, many-coloured; *multiflorus*, *polyanthus*, many-flowered; *multifolius*, *polyphyllus*, many-leaved; *multiformis*, *polymorphus*, many-shaped, very variable; *multifructus*, *polycarpus*, many-fruited; *multinodus*, with many nodes or knots; *multiceps*, many-headed; *multicellulatus*, *pluricellularis*, many-celled.

marbled: *marmoratus* (adj. A), q.v.

marcescens (part. B): withering but not falling off, hence dry and persistent.

marcidus (adj. A): withered. 342

Mare (s.n. III. x): the sea; cf. MALE.

margaritaceus (adj. A), *margaritatus* (adj. A): pearly, pearl-like.

Margin: *margo* (s.m. and f. III. vi), *acc. sing. marginem*, *abl. sing. margine*; *folia marginie incrassata*, leaves at the margin thickened; *folia marginie incrassato*, leaves with the margin thickened; *folia ad marginem incrassata*, leaves at the margin thickened. marginal: *marginalis* (adj. B). *margined*: *marginatus* (adj. A), *limitatus* (part. A), *praetextus* (part. A); cf. LIMBATUS. *margined*: in *L. comp.*, *-craspedus*; *aureomarginatus*, *chrysocraspedus*, golden-margined,

yellow-edged. margining: marginans (part. B). 458  
**marginicidalis** (adj. B): marginicidal, i.e. in septifragal dehiscence of a capsule when the margins of the valves are opposite and not between the dissepiments; *see SEPTICIDALIS*.  
**marinus** (adj. A): growing in the sea.  
**maritimus** (adj. A): growing by the sea.  
**Mark**: nota (s.f. I), signum (s.n. II); cf. **MACULA**. marked: notatus (part. A), signatus (part. A), markedly: valde (adv.), sigillatim (adv.).  
**marmoratus** (adv. A): marbled, irregularly striped or veined, the veins or the area along them irregularly coloured differently from rest of surface.  
**marroninus** (adj. A): maroon (H.C.C. 10.30).  
**Marsh**: palus (s.f. III. ii), *abl. sing.* palude. **marshy**: palustris (adj. B), *in Gk. comp.*, helo-.  
**marsupiatus** (adj. A): pouched. **marsupiformis** (adj. B): pouch-shaped, pocket-like. **Marsupium** (s.n. II): pouch, pocket, marsupium, fruiting receptacle of *Heptaceae*.  
**mas** (adj. B), **masculus** (adj. A), **masculinus** (adj. A): male.  
**Massa** (s.f. I): dough-like mass, lump; *massa pollinis*, *massula*, pollen mass.  
**mastoideus** (adj. A): nipple-like.  
**Mat**: teges (s.f. III): *filamenta tegetes formantes*, filaments forming mats.  
**Material**: materia (s.f. I).  
**maternal**: maternus (adj. A), matricalis (adj. B)  
**matricalis** (adj. B): maternal, uterine, within the ovary; *cellulae matricales*, mother cells.  
**Matrix**: matrix (s.f. III), *gen. sing. matrictis*.  
**matt**: hebetatus (part. A) 'made dull', impolitus (adj. A) 'unpolished', opacus (adj. A) 'shaded, darkened'. 299  
**matted**: implicitus (part. A), implexus (part. A).  
**Maturatio** (s.f. III): ripening. **maturescens** (part. B): ripening.  
**mature**: maturus (adj. A), adultus (part. A); cf. **EXCRETUS**. **mature** (adv.): early. **Maturitas** (s.f. III): ripeness, maturity; *usque ad fructus maturitatem persistens*, remaining up to the maturity of the fruit.  
**mauve**: malvinus (adj. A), malvicolor (adj. B).  
**maxime** (adv.): in the highest degree, extremely. **maximus** (adj. A, superl. of *magnus*): greatest; *maximam partem*, *pro maxima parte*, for the most part.  
**maybe**: fortasse (adv.).  
**Mazedium**: mazaedium (s.n. II).

**Meadow**: pratum (s.n. II), *abl. pl. pratis*. pertaining to meadows: pratensis (adj. B).  
**meagre**: macilentus (adj. A), macer (adj. A), exilis (adj. B).  
**mealy**: farinosus (adj. A). 331  
**Means**: ops (s.f. III), q.v.  
**meanwhile**: interea (adv.).  
**measured**: mensus (part. A), measuring: metiens (part. B); *pori 1 ad 2 mm. diametro metientes*, pores measuring 1-2 mm. in diameter; cf. **MENSURA**.  
**mechanicus** (adj. A): mechanical.  
**Medianum** (s.n. II): the middle. **medianus** (adj. A): middle.  
**medicinal**: medicinalis (adj. B), medicus (adj. A), officinalis (adj. B).  
**Medietas** (s.f. III): the middle.  
**mediifixus** (adj. A): attached by or at middle.  
**mediocris** (adj. B): middling, not remarkable, between large and small.  
**medioramifer** (adj. A): branched at the middle.  
**Mediostratum**: mediostratum (s.n. II).  
**mediterraneus** (adj. A): inland, in the middle of the land, remote from the sea. In this sense, opposed to *maritimus*, used by classical authors and older botanical authors, e.g. Sloane, but often used by others as referring to coasts, etc., of Mediterranean Sea; *in sylvis mediterraneis Jamaicae*, in inland woods of Jamaica; *in mediterraneis Hispaniae*, in the inland parts of Spain; *in mare atlantico et mediterraneo*, in Atlantic Ocean and Mediterranean Sea; *in regione mediterranea*, in the Mediterranean region; *algae maris mediterranei*, algae of the Mediterranean Sea.  
**Medium** (s.n. II): the middle; *in medio*, in the middle. **medius** (adj. A): middle, that is midway between; *species inter praecedentem et sequentem media, a quibus foliis hirsutis dignoscitur*, species between the preceding and the following midway, from which by hairy leaves it is distinguished.  
**medivalis** (adj. B): attached to the middle of a valve.  
**Medulla**: medulla (s.f. I). **medullary**: medullosus (adj. A). 330  
**meeting**: conveniens (part. B), incidens (part. B) (with acc.).  
**mega-**, **megalo-**: *in Gk. comp.*, big, great, large, very; *megacalyx*, *megalaclyx*, with large calyx; *megacanthus*, with large thorns; *megalanthus*, large-flowered; *megalobracts*, with large racemes; *megacarpus*, *megaloarpus*, large-fruited; *megacephalus*, *megalocephalus*, with large head; *megacheilus*, *megalocheilus*, with large lip; *megaphyllus*, *megalo-*

**phyllus**, large-leaved; *megapotamicus*, pertaining to a big river, i.e. the Rio Grande of Brazil; *megaspermus*, *megalospermus*, large-seeded; *megalosorus*, with large sori; *megasigma*, with large stigma. Vellozo unorthodoxly made the compounds *perianthomegus*, 'with large perianth' and *phyllomegus*, 'with large leaves'.  
**Megasporangium**: megasporangium (s.n. II), macrosporangium (s.n. II).  
**Megaspore**: megaspora (s.f. I), macrospora (s.f. I).  
**megisto-**: *in Gk. comp.*, very big, very large; *megistophyllus*, with very large leaves.  
**mei-, meio-**: *in Gk. comp.*, less, smaller, fewer; *meiogyrus*, rolled slightly inward.  
**Mel** (s.n. III. v): honey.  
**mel-, melan-, melano-**: *in Gk. comp.*, black, very dark; *melanacanthus*, with black thorns or prickles; *melanatherus*, *melantherus*, black-anthered; *melancholicus*, *melanocholy*, i.e. with downcast inflorescences or dingy flowers; *melanocarpus*, black-fruited; *melanocaulis*, black-stemmed; *melanophloeus*, with black bark; *melanophthalmus*, black-eyed; *melanorrhizus*, with black roots; *melanospermus*, black-seeded; *melanoporus*, black-spored; *melanostictus*, black-spotted; *melanotrichus*, black-haired.  
**melius** (adv.): better (compar. of *bene*).  
**melleus** (adj. A): honey-coloured, honey-like.  **mellitus** (adj. A): pertaining to honey, honey-sweet.  
**melting**: deliquescent (part. B): *ad nives deliquescentes*, at the melting snows.  
**Membrane**: membrana (s.f. I), *abl. sing. membrana*; *membrana connectivella longitudinaliter plicata*, with connecting membrane longitudinally folded. **membrane-bearing**: membranifer (adj. A).  
**membranous**: membranaceus (adj. A). **membranous-leaved**: membranifolius (adj. A). 310  
**mendosus** (adj. A): incorrect, full of faults. **meniscatus** (adj. A): shaped like a half-moon or crescent. **meniscoideus** (adj. A): thin and concavo-convex, like a watch-glass. 90  
**Mens** (s.f. III): power of recollection, mind, intellect.  
**Mensis** (s.m. III. vii): month. **menstruus** (adj. A): monthly, lasting for a month.  
**Mensura** (s.f. I): a measure. **mensus** (part. A): measured.  
**mentiens** (part. B): counterfeiting, imitating.  
**Mentum** (s.n. II): chin, projection, mentum.

thyrse; *microtrichus*, short-haired; *microtros*, small-eared.  
**Microple**: *micropyle* (s.f. I, Gk.), *acc. sing.* *micropyle*, *gen. sing.* *micropyles*, *abl. sing.* *micropyle*.  
**Microscope**: *microscopium* (s.n. II); *per microscopium electronicum*, by means of the electron microscope. **microscopic**: *microscopicus* (adj. A).  
**Microspore**: *microspora* (s.f. I).  
**mid**: *medius* (adj. A), q.v.  
**Middle**: *medium* (s.n. II), *medianum* (s.n. II); *caule ad medium usque foliato*, with stem up to the middle leaf-bearing.  
**middle**: *medius* (adj. A), *medianus* (adj. A), *middle*, *mid*: *in L. comp.*, *medi*, *in Gk. comp.*, *meso*..; cf. *INFRAMEDIANUS*.  
**midland**: *mediterraneus* (adj. A), *mesochorus* (adj. A); *see MEDITERRANEUS*.  
**Midrib**: *costa* (s.f. I); cf. *VEINING*.  
**mihi** (pron. dat.): to me; often abbreviated to *m.* and used after a name to indicate the author's responsibility for it (dative of the possessor; *est mihi*), as *Onosma hispanica mihi*.  
**mild**: *mitis* (adj. B). **mildly**: *leniter* (adv.).  
**Milk**: *lac* (s.n. III. ii), *abl. sing.* *lacte*; *latex* (s.m. III. i), *abl. sing.* *latice*. **milk**: *in L. comp.*, *lacti*, *in Gk. comp.*, *gal-*, *gala-*, *galacto-*; *lacticolor*, *galacthrous*, *milk-coloured*; *lactiflorus*, *galactanthus*, *galanthus*, with milk-white flowers; *see GAL-*, *LACTI-*. **milk-white**: *lactaneus* (adj. A), *lacteus* (adj. A), *lacticolor* (adj. B), *lactineus* (adj. A). **milky**: *lacteus* (adj. A), *lactarius* (adj. A).  
**mille** (num. adj. indecl.): thousand.  
**mimosinus** (adj. A): *mimosa* - yellow (H.C.C. 60.2).  
**mingled**: *mixtus* (part. A), *mixtus* (part. A), *immixtus* (part. A), *miscellus* (adj. A), *misturatus* (adj. A).  
**miniatus** (adj. A): *saturn-red* (H.C.C. 13), *flame-scarlet*, *lit.* 'painted with red lead'.  
**minime** (adv.): least, very little, extremely seldom. **minimopere** (adv.): not at all.  
**minimum** (adv.): at least. **minimus** (adj. A); *superl. of parvus*: very little, very least.  
**minor** (adj. B; compar. of *parvus*): smaller, inferior, lesser.  
**minuens** (part. B): lessening, ebbing, waning.  
**minus** (adv.): less; *haud minus quam*. not less than; *nihil minus*, by no means; *si minus*, if not, otherwise.  
**minute** (adv.): finely, minutely. **minutus** (part. A): very small, minute.  
**mir** (adv.): wonderfully. **mirimodis** (adv.): in an astonishing manner.  
**mirus** (adj. A): wonderful, extraordinary, remarkable.

**miscellus** (adj. A): mixed.  
**misschapen**: *deformis* (adj. B).  
**missus** (part. A): sent; *secundum exemplar unicum herbarii Linnaeani, ab Alstroemerio missum*, according to the one specimen of the Linnaean herbarium, by Alströmer sent.  
**Mistake**: *erratum* (s.n. II), *abl. sing.* *errato*, *nom. pl.* *errata*; *error* (s.m. III. v), *abl. sing.* *errore*, *abl. pl.* *errores*.  
**misturatus** (adj. A), *mixtus* (part. A): mixed, mingled.  
**mitis** (adj. B): mild, mellow, innoxious, soft.  
**mitre-shaped**: *mitriformis* (adj. B).  
**mixed**: *see MINGLED*.  
**Mixomorph**: *mixomorpha* (s.f. I), *nom. pl.* *mixomorphae*.  
**mixtus** (adj. A): mixed.  
**mobile**: *mobilis* (adj. B); cf. *AGILIS*.  
**moderately**: moderate (adv.), *modice* (adv.), *bono modo* (adv.), *parce* (adv.).  
**modice** (adv.): moderately, not very, not much, lightly.  
**Modification**: *modificatio* (s.f. III. vi).  
**modioliformis** (adj. B): nave-shaped. 92  
**modo** (adv.): only, merely; *bono modo*, moderately; *non modo*, not only; *nullo modo*, in no way; *modo . . . tum . . .* at first . . . then. . . .  
**Modus** (s.m. II): standard, measure, manner, way of conduct or happening.  
**moist**: *humidus* (adj. A); *madidus* (adj. A), *udus* (adj. A). **moistened**: *humecatus* (part. A), *humefactus* (part. A), *madefactus* (part. A); *in statu sicco vel humectato*, in dry or moistened state; *thallus in sicco cinereus*, *madefactus rosaceo-cinerascens*, *thallus* in a dry state grey, when moistened rosy-greyish; *foliis siccitate appressis*, *humiditate recurvatis*, with leaves by drying appressed, by moistening recurved. **Moistness**, **Moisture**: *mador* (s.m. III), *abl. sing.* *madore*; cf. *HYGRO*.  
**molendinaceus** (adj. A): furnished with large wing-like expansions. 61  
**mollis** (adj. B): soft, pliant. *mollusculus* (adj. A): somewhat soft.  
**molybdeus** (adj. A): leaden grey.  
**Momentum** (s.n. II): circumstance, influence, weight, importance; *notae haud sunt magni momenti*, the characters are not of great importance.  
**mon-, mono-**: *in Gk. comp.*, one-; *monadelphus*, with filaments or stamens united in one; *monandrus*, with one stamen; *monantherus*, with one anther; *monanthus*, one-flowered; *monaxialis* having a single axial filament; *monoccephalus*, with one head; *monochlamydeus*, with one kind of perigon;

**monochrous**, of a single colour; **monogynous**, with one style or carpel; **monopetalus**, having petals joined in one, gamopetalous; *monophyllus*, one-leaved; *monospermus*, one-seeded; *monostachyus*, with a single spike; *monosiphonous*, consisting of one continuous tube; *monostichus*, in one row; *monotypicus*, with only one member.  
**Monas** (s.f. III.): unit.  
**moniliformis** (adj. B): moniliform, i.e. cylindrical but contracted at regular intervals like a string of beads. 51  
**monocarpic**: *monocarpus* (adj. A), *monocarpicus* (adj. A), *monocarpaeus* (adj. A), *hapaxanthus* (adj. A), *monotocus* (adj. A). Such plants, which flower and fruit but once and then die, may be annual or monocyclic (*annus*), biennial or dicyclic (*biennis*), lasting for several years or polycyclic (*plantesialis*). 342  
**monochasial**: *monochasialis* (adj. B).  
**Monochasium**: *monochasium* (s.n. II).  
**Monocotyledon**: *monocotyledon* (s.m. III), *nom. pl.* *monocotyledones*.  
**monoecious**: *monoecius* (adj. A), *monoicus* (adj. A).  
**Monopodium**: *monopodium* (s.n. II).  
**monopodial**: *monopodialis* (adj. B).  
**monotocus** (adj. A): producing offspring but once: cf. *MONOCARPIC*.  
**Mons** (s.m. III. ix): mountain.  
**monstruosus** (adj. A), *monstruosus* (adj. A): monstrous, abnormal, teratological.  
**montanus** (adj. A): pertaining to or growing on mountains, montane.  
**Month**: *mensis* (s.m. III. vii), *gen. sing.* *mensis*; *per duos vel tres menses*, for two or three months; *primo mense*, at the beginning of the month. **monthly**: *menstruus* (adj. A), q.v.  
**morbidus** (adj. A): diseased, causing disease.  
**morbus** (adj. A): sickly, diseased.  
**Morus** (s.m. II): disease.  
**morchelliformis** (adj. B): morel-shaped, i.e. ovoid with a honeycomb-like pitted surface, resembling the fruit-body of *Morchella esculenta*.  
**more**: plus (adj.), *gen. sing.* *pluris*, *nom. pl.* *plures*, *plura*, *gen. pl.* *plurium*. **more**: (in quantity) plus (adv.), (in degree) magis (adv.); *plus minusve*, more or less. **little more than**, quasi (adv.). **more than**: ultra (adv.), plus quam.  
**More** (abl. sing. of *Mos*, s.m. III. iv): according to custom, in the manner of, like; *more Phomatis*, in the manner of *Phoma*; *pro more*, customarily; *more suo*, in his own way, after his fashion.  
**Morphology**: *morphologia* (s.f. I).

**-morphus**: *in Gk. comp.*, -shaped; *dimorphus*, existing in two forms; *dimorphophyllus*, with leaves of two shapes.  
**mosaic**: *mosaicus* (adj. A).  
**moschatus** (adj. A): musky, musk-scented.  
**Moss**: *muscus* (s.m. II): *in Gk. comp.*, *bryo*-, *bryon*, *bryum*.  
**mostly**: *maximam partem*, pro parte *maxima* 'for the most part', *plerumque* (adv.) 'generally', *vulgo* (adv.) 'commonly', *ut maximum* (adv. phrase) 'at most'.  
**Mother**: *mater* (s.f. III), *gen. sing.* *matris*. **mother**: *maternus* (adj. A), *matricalis* (adj. B).  
**motile**: *mobilis* (adj. B), *movens* (part. B); *cellulae formam mutantes dum movent*, cells changing shape when they move.  
**motionless**: *immobilis* (adj. B).  
**Motus** (s.m. IV): movement.  
**mouldy**: *mucidus* (adj. A), *mucedinosus* (adj. A).  
**Monnd**: *tumulus* (s.m. II); *mounded*: *acervatus* (part. A), *cumulatus* (part. A).  
**Monntain**: *mons* (s.m. III. ix), *gen. sing.* *montis*, *abl. sing.* *monte*, *nom. pl.* *montes*, *gen. pl.* *montium*, *abl. pl.* *montibus*; *area geographica speciei extenditur per montes Carpatorum*, geographical area of the species extends through the mountains of the Carpathians; *in silvis montium Jamaicæ*, in woods of the mountains of Jamaica; *in montibus excelsis*, in high mountains. **mountain**, **montane**, pertaining to mountains: *montanus* (adj. A); *in locis uidis regionis montanae et subalpinae*, in damp places of the montane and subalpine region; *prope rivulos in convallibus montanis*, near streams in mountain valleys. **mountain-**: *in L. comp.*, *monti*, *in Gk. comp.*, *oreo*-, *monticola*, a dweller on mountains; *montigenus*, *oreogenus*, mountain-born; *montivagus*, wandering over mountains; *oreophilus*, mountain-loving.  
**Mouth**: *os* (s.n. III. iv), *acc. sing.* *orem*, *abl. sing.* *ore*; *orificium* (s.n. II), *acc. sing.* *orificium*, *abl. sing.* *orificio*; *ostium* (s.n. II), *acc. sing.* *ostium*, *abl. sing.* *ostio*; *corolla sub ore constricta*, corolla below the mouth constricted; *theca infra orificium constricta*, theca below the mouth (opening) constricted; *tubus calycinus capsulae ostium superans*, calyx tube the mouth of the capsule overtopping; cf. *RICTUS*.  
**Movement**: *motus* (s.m. IV).  
**movens** (part. B): moving, motile; *cellulae leniter moventes*, cells gently moving.  
**mox** (adv.): soon, presently.  
**mucedinosus** (adj. A), *mucidus* (adj. A): mouldy.

much: *multus* (adj. A). much: *multum* (adv.), *multo* (adv.) (in comparisons); much as: *tanquam* (adv.); much more . . . than: *multo magis* (adv.) . . . quam. not much: *vix* (adv.), *non nihil* (adv.), *paulo* (adv.). too much: *nimiris* (adv.)

**muciger** (adj. A): mucus-bearing, mucus-producing.

**Mucilage**: *mucus* (s.m. II), *acc. sing. mucum*, *abl. sing. muco*; *vaginae in mucum amorphum gelatinosum diffuentes*, sheaths into amorphous gelatinous mucilage dissolving; *planta gloeocarpa dicta*, i.e. *verticillis* *fertilibus* in *muco involutis*, plant termed 'gloeocarpous' i.e. with fertile whorls in mucilage enveloped; cf. **GLOEO-**. **mucilaginous**: *mucilaginus* (adj. A), *mucosus* (adj. A).

**mucosus** (adj. A): slimy, mucous, mucilaginous. 301

**Mucro**: *mucro* (s.m. III. vi), *abl. sing. mucrone*. **mucronate**: *mucronatus* (adj. A). 140

**Mud**: *limus* (s.m. II), *lutum* (s.n. II); in *L. comp.*, *limi-*. **mud-dwelling**: *lutarius* (adj. A), *lutenis* (adj. B); cf. **LIMOSUM**.

**multi-, multi-**: in *L. comp.*, many-; on the analogy of *multicaulis*, many-stemmed, *multifidus*, cleft into many parts, *multiflorus*, abounding in flowers, *multiformis*, many-shaped, manifold, *multijugus*, with many yoked together, *multinodus*, *multinodis*, having many knots, *multipartitus*, much divided, *multiplex*, many-folded, etc., which exist in classical L., botanists have coined some 50 epithets or terms, the meanings of which are, however, usually self-evident; *multangulus*, many-angled; *multiaxialis*, having a core of axial filaments; *multiceps*, many-headed, i.e. with many shoots from a single crown; *multinervis*, *multinervius*, many-nerved; *multiseptatus*, with many partitions; *multiserialis*, many-ranked; *multivalvis*, many-valved. 225

**multifarium** (adv.); in many rows. **multifarius** (adj. A): many-rowed.

**multiplex** (adj. A): with many parts of the same kind together, as in a double flower.

**Multiplication**: *multiplicatio* (s.f. III. vi); *multiplicatio vegetativa divisione cellularum, propagatio agamica zoosporarum ope, generatio sexualis zoogametarum ope*, vegetative multiplication by division of the cells, agamic propagation by means of zoospores, sexual generation by means of zoogametes. **multiplied**: *multiplicatus* (part. A), *auctus* (part. A).

**multo** (adv.): by much, much. **multities** (adv.): many times. **multum** (adv.):

much, often, frequently, greatly. **multus** (adj. A): many, much, great.

**multitus** (part. A): provided with, lit. 'fortified, protected'; *folia spinis recurvis nigris munita*, leaves by recurved black spines defended.

**muralis** (adj. B): belonging to or growing on walls.

**muriaticus** (adj. A): hydrochloric.

**muricatus** (adj. A): muricate, i.e. rough with short hard points like the shell of Murex (see Chapter XVIII). 264

**muriformis** (adj. B): muriform, having the appearance of bricks in a wall.

**murinus** (adj. A): mouse-grey, pale brownish-grey.

**Murus** (s.m. II): wall.

**muscous** (adj. A): mossy, moss-like.

**Muscus** (s.m. II): moss.

**Museum**: *museum* (s.m. II), *gen. sing. musei*; *ex Herbario Musei Britannici*, from the Herbarium of the British Museum.

**mushroom-shaped**: *fungiformis* (adj. B), *fungilliformis* (adj. B). 91

**musky**: *moschatus* (adj. A).

**mutabilis** (adj. B): changeable.

**Mutation**: *mutatio* (s.f. III), *gen. sing. mutationis*.

**mutatus** (part. A): changed.

**mycetus** (adj. A): without a point, awnless, blunt. 165

**multilatus** (part. A): mutilated, cut short.

**mutue** (adv.): mutually, in relation to each other, reciprocally.

**myc-, mycel-, myceto-, myco-, -myces**: in *Gk. comp.*, fungal, fungus-, fungous.

**mycelial**: *mycelialis* (adj. B); *setae myceliales numerosae erectae rectae simplices acutae atrae 180-200  $\mu$  longae basi 7-9  $\mu$  crassae*, mycelial setae numerous erect straight unbranched acute black 180-200  $\mu$  long at base 7-9  $\mu$  thick; *setae myceliales nullae*, mycelial setae none; *setis mycelialis numerosis erectis simplicibus vel apice irregulariter furcatis*, with mycelial setae numerous erect simple or at the tip irregularly forked. **Mycelium**: *mycelium* (s.m. II), *gen. sing. mycelii*, *abl. sing. mycelio*; *mycelium epiphyllum ex hyphis brunneis undulatis septatis 10  $\mu$  crassis (cellulis plerumque 30  $\mu$  longis) opposite vel irregulariter ramosis laxe reticulatis compositum*, mycelium growing on upper side of leaves from hyphae brown undulate septate 10  $\mu$  thick (with cells usually 30  $\mu$  long) opposite or irregularly branched loosely reticulate composed.

**Mycology**: *mycologia* (s.f. I)

**myri-, myrio-**: in *Gk. comp.*, countless, very many; *myrianthus*, with numerous

flowers; *myrioneurus*, with numerous nerves; *myriophyllum*, with numerous leaves or leaf-divisions; *myriostictus*, with numerous spots or dots.

**myrme-, myrmec-, myrmeco-**: in *Gk. comp.*, pertaining to ants; *myrmecocalyx*, with calyx inhabited by ants; *myrmecophilus*, ant-loving, i.e. providing structures liked by ants.

**myx-, myxo-**: in *Gk. comp.*, slimy, slimy-mucus.

## N

**naked**: *nudus* (adj. A); (without leaves) *aphyllus* (adj. A); cf. **GYMNO-**. **somewhat naked**: *nudiusculus* (adj. A). 298

**nam (conj.)**: thus, for example. **namque (conj.)**: for indeed.

**Name** (s.n. III. vi): *nomen* (s.n. III. vi), *gen. sing. nominis*, *abl. sing. nomine*, *nom. pl. nomina*, *abl. pl. nominibus*; *see NOMEN*. **named**: *nominatus* (part. A).

**namely**: *id est, scilicet* (adv.).

**nan-, nann-, nano-, nanno-**: in *Gk. comp.*, dwarf. *nanandrus*: nanandrous.

**nanus** (adj. A): dwarf. 335

**napiro** (adj. B): turnip-shaped.

**narcotic**: *narcoticus* (adj. A).

**narrow**: *angustus* (adj. A). **narrowed**: *angustatus* (part. A), *attenuatus* (part. A), *contractus* (part. A); *lamina in petiolum alatum angustata*, blade into a winged petiole narrowed; *lamina basi sensim in petiolum attenuata vel subito contracta*, blade at base gradually into the petiole drawn out or abruptly contracted. **narrowing**: *decrescens* (part. B); *lamina in petiolum canaliculatum gradatim decrescens*, blade into a channelled petiole gradually narrowing.

**narrowly**: *anguste* (adv.); *angusti ovatus*, narrowly ovate. most narrow: *angustissimus* (adj. A). very narrow: *perangustus* (adj. A). very narrowly: *peranguste* (adv.).

**nascens** (part. B): arising, beginning.

**natalis** (adj. B): pertaining to birth; *locus natalis*, place of birth, locality for a plant, station; cf. **SOLUM**.

**natans** (part. B): swimming, floating on or under the surface of water. 390

**native**: *indigenus* (adj. A), *(inborn) nativus* (adj. A).

**natural**: *naturalis* (adj. B).

**naturalized**: *inquilinus* (adj. A).

**Nature**: *natura* (s.f. I).

**natus** (part. A): born.

**nauseous** (adj. A): producing sickness, nauseous.

**Navalia** (s.n. II. pl.): docks.

**Navel**: *umbilicus* (s.m. II), *navel-shaped*: *umbilicatus* (adj. A), *umbiliciformis* (adj. B); in *Gk. comp.*, *omphalo-*.

**Navicula** (s.f. I): a boat. *navicularis* (adj. B), *naviculiformis* (adj. B): boat-shaped. 46

**Navis** (s.f. III) : ship.

**ne (adv. & conj.)**: no, not.

**near**: *prope* (prep. with acc.). **near**: *propinquus* (adj. A), *proximus* (adj. A). **nearly**: *fere* (adv.), *paene* (adv.), *prope* (adv.), *quasi* (adv.), *propemodum* (adv.). **nebulosus** (adj. A): clouded, cloudy, with unevenly blended colours.

**nec** (adv. and conj.), *neque* (adv. and conj.): not, and, not, also not; *nec . . . nec*, *neque . . . neque*, neither . . . nor; *nec . . . et*, *neque . . . et*, not only . . . but also. *necnon* (conj.), *neque non* (conj.): and also, and yet, likewise.

**Neck**: *collum* (s.m. II), *acc. sing. collum*, *gen. sing. colli*, *abl. sing. collo*.

**-necked**: in *L. comp.* *-collis* (adj. B).

**necklace-like**: *moniliformis* (adj. B). 51

**necnon**, *neque*: see **NEC**.

**necro-**: in *Gk. comp.*, dead.

**Nectar**: *nectar* (s.n. III. x), *abl. sing. nectare*.

**nectar-bearing, nectarial**: *nectarifer* (adj. A), *nectarifluus* (adj. A), *nectareus* (adj. A): *sulco nectarifero glabro viridi*, with nectarial furrow glabrous green.

**Nectary**: *nectarium* (s.n. II), *abl. sing. nectario*, *nom. pl. nectaria*, *abl. pl. nectariis*.

**needle-like**: *acicularis* (adj. B), *aciformis* (adj. B), *acerosus* (adj. A). 115

**neglected**: *neglectus* (part. A), *praetermissus* (part. A), *omissus* (part. A).

**negligently**: *neglecte* (adv.), *neglectim* (adv.), *negligenter* (adv.).

**neighbouring**: *vicinus* (adj. A), *propinquus* (adj. A).

**neither . . . nor**: see **NEC**.

**-nema** (s.n. III. xi): in *Gk. comp.*, thread.

**nemato-**: in *Gk. comp.*, thread-like; *nematospadix*, with thread-like spadix.

**Nematode**: *nematodum* (s.n. II); *vermiculus* (s.m. II) *nematoideus* (adj. A).

**nemoralis** (adj. B), *nemorus* (adj. A): pertaining to woods and groves.

**nempe** (conj.): certainly, namely.

**Nemus** (s.n. III. iv): grove, open woodland.

**neo-**: in *comp.*, new. Mostly used as prefix to avoid or remedy the creation of generic homonyms or to connect a new group with a closely related one, e.g. *Neocolletia* and *Colletia*, *Neolitsea* and *Litsea*, *Neomarica* and *Marica*; *neogaetus*, pertaining to the New World; *neoguineensis*, pertaining to New Guinea; *neotropicus*, pertaining to the American tropics.

**nephro-**: in *Gk. comp.*, kidney-; *nephro-lepis*, with kidney-shaped scales; *nephrophyllus*, with kidney-shaped leaves. **nephrodeus** (adj. A): kidney-shaped (used of solid objects such as seeds). **nervalis** (adj. B): situated on a nerve.

**Nervation**: *nervatio* (s.f. III). **Nerve**: *nervus* (s.m. II), *abl. sing.* *nervo*, *nom. pl.* *nervi*, *abl. pl.* *nervis*; cf. *VEINING*. **nerved**: *nervatus* (adj. A), *nervosus* (adj. A). **nerve**: in *L. comp.*, *nervi*, in *Gk. comp.*, *neuro*-; *nervifolius*, *neurophyllus*, with strongly nerved leaves; *neurocarpus*, with strongly nerved or ribbed fruit. **-nerved**: in *L. comp.*, *-nervis* (adj. B), *-nervius* (adj. A), in *Gk. comp.*, *-neurus* (adj. A); *triplinervis*, three-nerved; *quintuplinervis*, five-nerved, *multinervis*, many-nerved; *parallelinervius*, *parallelonervus*, parallel-nerved; *dictyoneurus*, with netted nerves. **nerveless**: *enervis* (adj. B), *enervius* (adj. A), *nullinervius* (adj. A). **343, 361**

**nervisequens** (adj. B): following the nerves, along the nerves.

**Nervule**: *nervillus* (s.m. II), *nervulus* (s.m. II).

**neso-**: in *Gk. comp.*, pertaining to islands.

**Nest**: *nidus* (s.m. II). **nestling**: *nidulans* (part. B), q.v.

**Net**: *rete* (s.m. III. x), *abl. sing.* *reti* or *rete*.

**net**: in *L. comp.*, *reti*, in *Gk. comp.*, *dictyo*-; *dictyophlebius*, net-veined. **net-like**, **netted**: *reticulatus* (adj. A). **Net-work**: *reticulum* (s.n. II). **246**

**nenter**: *neuter* (adj. A), *lit.* 'neither the one nor the other'.

**neutriquam** (adv.): by no means.

**never**: *nunquam* (adv.), *haud* (adv.), *nullo modo* (adv.), *nec unquam* (adv.).

**nevertheless**: *attamen* (adv.), *tamen* (conj.).

**new**: *novus* (adj. A); *nomen novum*, new name substituted for a name not available; in *comps.*, *neo*-, *nov*o-, *novi*-, with *novae* (genitive sing. f. of *novus*) mostly in geographical names; *novae-hollandiae*, of New Holland, i.e. Australia; *novi-belgi*, of New Netherlands, i.e. Manhattan, N.Y., U.S.A.; *novogranatensis*, pertaining to New Granada.

**next**: *proximus* (adj. A with dat.).

**next to**: *juxta* (prep. with acc.)

**nexus** (part. A): tied together, interlaced, entwined.

**nidulans** (part. B): nestling, nesting, partially encased or lying in a cavity, embedded in pulp; *apothecia in tomento folii nidulantia*, apothecia partially encased in the tomentum of the leaf.

**Nidus** (s.m. II): nest.

**niger** (adj. A): black, esp. glossy black.

**nigrifactus** (part. A): blackened.

**nigrescens** (part. B): becoming black. **nigricans** (part. B): blackish, swarthy. **Night**: *nox* (s.f. III), *gen. sing.* *noctis*, *abl. sing.* *nocte*, *nom. pl.* *noctes*, *abl. pl.* *noctibus*, at night: *nocte* (adv.), *noctu* (adv.): belonging to night: *nocturnus* (adj. A).

**Nihil** (s.n. indecl.), **nihilum** (s.n. II), **nil** (s.n. indecl.): nothing, **nihil** (adv.): by no means. **nihilominus** (adv.): nevertheless, notwithstanding.

**nimirnm** (adv.): without doubt, certainly, surely.

**nimir** (adv.): too much, excessively, very much; *non nimis*, not too much, not very.

**nine**: *novem* (n.n.m. adj. indecl.) 'nine', *novenus* (adj. A) 'nine each, nine, ninth', *novies* (adv.), *noviens* (adv.) 'nine times'. **nine**: in *L. comp.*, *noven*-, *novem*-, in *Gk. comp.*, *ennea*-, *enneaphyllus*, with nine leaves or leaflets; *novenmervius*, nine-nerved.

**Nipple**: *mamilla* (s.f. I), *papilla* (s.f. I). **nipple-shaped**: *mammiformis* (adj. B), *mastoideus* (adj. A).

**nisi** (conj.): if not, unless; *nisi si*, except if; *nisi ut*, except that.

**nitens** (part. B), **nitidus** (adj. A): shining, polished. **Nitor** (s.m. III): brightness, sheen, glossiness, shine. **294**

**Nitrate**: *nitras* (s.m. III. ii), *gen. sing.* *nitratis*. **nitric**: *nitricus* (adj. A). **Nitrogen**: *nitrogenium* (s.n. II), *gen. sing.* *nitrogenii*.

**nivalis** (adj. B): pertaining to snow, snowy, snow-like. **nivescens** (part. B): becoming snow-white. **niveus** (adj. A): snowy, snow-white. **nivorus** (adj. A): full of snow.

**Nix** (s.f. III): snow.

**Nobis** (pron. dat.): to us; see *MIHI*.

**noctiflorus** (adj. A): night-flowering.

**nocturnus** (adj. A): belonging to the night; cf. *DIURNUS*, *VEPPERTINUS*.

**nodding**: *nutans* (part. B). **408**

**Node**: *nodus* (s.m. II), *abl. sing.* *nodo*, *nom. pl.* *nodi*, *acc. pl.* *nodos*, *abl. pl.* *nodis*; *geniculum* (s.n. II) is little used; *rami ad nodos incrassati*, branches at nodes thickened; *culmi nodis incrassati pilosiss*, culms with nodes thickened pilose.

**-noded**: in *L. comp.*, *-nodus* (adj. A), *-nodis* (adj. B); *multinodus*, *multinodis*, many-noded.

**Nodifrons** (s.f. III. ix): nodiflora, leafy nodal bract subtending inflorescence in palms.

**nodusus** (adj. A): knotted, knobby.

**Nodule**: *nodus* (s.m. II), *abl. sing.* *nodulo*, *nom. pl.* *noduli*, *acc. pl.* *nodulos*, *abl. pl.* *nodulis*; *valvae typice nodulo*

*centrali singulo rotundato magno nodulique terminalibus 2 donatae*, valves typically with a central solitary rounded large nodule and 2 terminal nodules presented; *circa nodulum centrale*, around the central nodule. **nodule-bearing**: *nodulifer* (adj. A). **nodule-like**: *noduliformis* (adj. B).

**Nodus** (s.m. II): node, q.v.

**Nomen** (s.n. III): name; *nomen illegitimum*, illegitimate name, i.e. one not in accordance with the rules of nomenclature; *nomen a Linnaeo adhibitum*, name by Linnaeus employed; *nomen usitatum*, usual name; *specimen sphalmate sub nomine 'triceropermo' emisum*, specimen by error under the name 'triceroppermum' sent out; *Benthamius hoc nomen citavit*, Bentham this name cited; *nomina nova in opere meo inclusa*, new names in my work included.

**Nomenclature**: *nomenclatura* (s.f. I), *gen. sing.* *nomenclature*; *secundum leges nomenclaturae internationales*, following the international laws of nomenclature; *contra regulam codicis nomenclaturae*, against a rule of the code of nomenclature.

**nominatus** (part. A): named.

**non** (adv.): not; *non nihil*, not much; *non vero*, truly not; *non nisi*, *non nisi*, only; *non fere*, scarcely, hardly; see *NOT*.

**nodum** (adv.): not yet.

**none**: *nullus* (adj. A).

**nonnullus** (adj. A): some, several.

**nonnunquam** (adv.): sometimes.

**nonus** (adj. A): ninth.

**nor**: *necque* (conj.); see *NEC*.

**normal**: *normalis* (adj. B). Used as epithet to distinguish completely green from variegated forms and single- from double-flowered forms. **101**

**North**: *septentrio* (s.m. III), *gen. sing.* *septentrioris*; *ad septentriones*, to the north, *lit.* 'to the seven stars of the Great Bear'. **north**, **northern**: *septentrionalis* (adj. B), *borealis* (adj. B).

**noster** (pron. adj. A): our, ours.

**not**: *non* (adv.), *nihil* (adv.), *nullo modo*.

**non** is generally used and comes immediately before the word or words negated. *nihil*, 'not at all', is used only with verbs. *nequaquam*, *nullimodo*, *nullo modo*, 'by no means, in no way', *numquam*, 'at no time, never', *haud*, 'not at all, by no means', are more emphatic. In phrases *nec . . . nec*, 'neither . . . nor', *neque . . . neque*, 'neither . . . nor', *nec . . . et*, 'not only . . . but also', may be employed; *seminum testa non crustacea*, of the seeds the testa not crustaceous; *ramis*

*teretibus neque triquetris neque alatis*, with branches terete neither triquetrous nor winged; *fructus nondum descriptus verisimiliter non dehiscens*, fruit not yet described very likely not dehiscent; *labellum medio non sulcatum*, labellum at the middle not grooved; *flores non visi*, flowers not seen; *discus nec abus nec ater*, disc neither white nor black.

**Nota** (s.f. I): that by which a thing is known, distinguishing mark, feature.

**notabilis** (adj. B): noteworthy, remarkable; cf. *WONDERFUL*.

**notable**: *insignis* (adj. B), *notabilis* (adj. B). **notably**: *insigniter* (adv.).

**notatus** (part. A): marked.

**Notch**: *incisura* (s.f. I).

**noth-**, **notho-**: in *Gk. comp.*, false-. Used in coining generic names indicating close but incomplete agreement, e.g. *Nothofagus*. **nothus** (adj. A): false, not genuine, mongrel, hybrid.

**noto-**: in *Gk. comp.*, southern, south-; *Notelaea*, southern olive.

**noto-**: in *Gk. comp.*, dorsal, back-, on the back; *Notoceras*, dorsal spur; *Notylia*, dorsal hump.

**Notula** (s.f. I): a little mark, a small note or article.

**nourishing**: *nutricius* (adj. A), *nutritorius* (adj. A), *alilibis* (adj. B); *planta nutricia*, host-plant. **Nourishment**: *alimentum* (s.n. II), *nutrimentum* (s.n. II); see *FOOD*.

**novellus** (adj. A): young.

**novem** (num. adj. indecl.): nine. **noven-**: in *L. comp.*, nine-. **novenus** (adj. A): nine each, nine. **noviens** (adv.): *novies* (adv.): nine times, ninefold.

**Novitates** (s.f. III. ii. pl.): new things, novelties.

**now**: *nunc* (adv.), *jam* (adv.).

**nowhere**: *nullibi* (adv.), *nusquam* (adv.).

**Noxa** (s.f. I): injury, hurt. **noxious** (adj. A): harmful, injurious.

**nubilis** (adj. B): ready for pollination.

**nubilus** (adj. A): cloudy, dark, greyish-blue.

**nucamentaceus** (adj. A): in the form of a nutlet. **nucatus** (adj. A): nut-brown.

**nucifer** (adj. A): nut-bearing. **nuciformis** (adj. B): nut-shaped.

**nucleatus** (adj. A): with a kernel or stone, with a nucleus.

**Nucleus**: *nucleus* (s.m. II), *abl. sing.* *nucleo*.

**Nucula** (s.f. I): nutlet.

**nudicusculus** (adj. A): somewhat naked.

**nudus** (adj. A): naked, i.e. devoid of leaves or some other clothing, lacking usual covering, bare. **298**

**nullibi** (adv.): nowhere.

nullimodo (adv.): by no means, in no way.

nullinervius (adj. A): nerveless, q.v. 361

nullus (adj. A): not any, none, lacking, absent.

Number: numerus (s.m. II), acc. sing. numerum, abl. sing. numero; *inflorescentia quoad florum numerum variabilis*, inflorescence with respect to number of flowers variable; *numero 1-6 varians*, with number from 1 to 6 varying; *stamina numero perigonii phyllis aequalia*, stamens to the number of leaves of perigon equal; *autore numerum specierum generis valde reduxit*, the author greatly reduced the number of species of the genus.

Numerals: these are listed in Chapter VIII (pp. 108-110). In descriptions Arabic figures are generally preferable to Latin words, e.g. *calyx 10-nervis 5-dentatus* rather than *calyx decemnervis quinque-dentatus*. In forming names and epithets, Gk. numerical prefixes should be united to words of Gk. origin, L. prefixes to L. words, avoiding such hybrids as *quadragonus*, *sexandrus*. When a word though of Gk. origin has become completely latinized, as *calyx*, *lobus*, *petalum*, or is neither Gk. nor L. but accords with both, as *tepalum*, it can take either a Gk. or a L. prefix, Gk. being usually preferred: 1-, L. *uni*, Gk. *mono*-; 2-, L. *bi*, Gk. *di*-; 3-, L. *tri*-; 4-, L. *quadri*, Gk. *tetra*-; 5-, L. *quinque*-, Gk. *penta*-; 6-, L. *sex*, Gk. *hex*-; 7-, L. *septem*, Gk. *hepta*-; 8-, L., Gk. *octo*-; 9-, L. *noven*, *novem*, Gk. *ennea*-; 10-, L. *decem*, Gk. *deca*-; 11-, L. *undecim*, Gk. *hendeca*-; 12-, L. *duodecim*, Gk. *dodeca*-; 20-, L. *viginti*, Gk. *icos*-; few, L. *pauci*, Gk. *oligo*-; several to many, L. *pluri*-; many, L. *multi*, Gk. *poly*-; hundred, L. *centi*, Gk. *hecto*, *hecto*-; very many, Gk. *myri*-; see ONE-, TWO-, THREE-.

numerous: numerosus (adj. A), multus (adj. A), plurimus (adj. A).

nunquam: see NUNQUAM.

nunc (adv.): now, at present; *nunc . . . olim . . .*, now . . . formerly.

nuncupatus (part. A): enumerated, named.

nunquam (adv.): at no time, never, by no means.

nuper (adv.): recently, not long ago.

nusquam (adv.): nowhere.

Nut: nux (s.f. III. i), gen. sing. nucis, abl. sing. nuce, nom. pl. nuces, gen. pl. nucum or nucerum; *nux initio conica vel rotundata denique oviformis vel subglobosa obtusa glabra vel pilis stellatis vestitata*, nut at first conical or rounded

at length egg-shaped or subglobose blunt glabrous or with stellate hairs clothed.

nutans (part. B): nodding. 408

Nutlet: nucula (s.f. I).

nutricius (adj. A): nourishing, that nourishes or nurses. nutritius (part. B): nourishing, feeding, sustaining with food. Nutrimentum (s.n. II): nourishment. nutritorius (adj. B): nourishing, nutritious. Nutrix (s.f. III. i): host-plant, lit. 'wet-nurse, nurse'.

Nux (s.f. III): nut, q.v.

nyct-: in Gk. comp., pertaining to night.

## O

ob (prep.): when used with verbs of motion towards, with verbs of rest usually on account of, by reason of. In Class. L. *ob* was used with acc., in late L. also with abl.; *species nova ob bulbum parvum, folia laevia, calycem glandulosum, petala alba inter species sectionis Leiophylli ponenda*, new species on account of the bulb small, leaves smooth, calyx glandular, petals white among species of section *Leiophyllum* to be placed.

ob- (prefix): inverted-, reversed-, the other way round; *obclavatus*, club-shaped but attached by thicker end; *obcompressus*, flattened above and below instead of from side to side, so that two sutures of fruit, for example, are brought close together; *obconicus*, conical but with apex downward; *obcordatus*, reversed cordate with deep sinus remote from attachment; *obdiplostemonus*, with twice as many stamens as petals to which the outer series are opposite; *oblanceolatus*, oblanceolate, i.e. reversed lanceolate, the broadest part above the middle, length to breadth about 3 to 7; *obovatus*, obovate, i.e. reversed ovate, the broadest part above the middle, length to breadth about 3 to 2; *obpyramidalatus*, reversed pyramidal; *obtriangularis*, obtriangular; *obtrullatus*, obtrullate, angular-obovate.

obducens (part. B): covering, spreading over. *obductus* (part. A): covered over, overspread.

obesus (part. A): fat, stout, plump.

oblatus (adj. A): oblate, i.e. almost circular but flattened above and below so that length to breadth is about 3 to 4.

obligatus (part. A): bound, obligatory.

oblique: obliquus (adj. A). obliquely: oblique (adv.). 137, 397

obliteratus (part. A): effaced, i.e. so weakly developed as to be hardly perceptible.

oblitus (part. A): smeared, filled to excess; cf. TEXTURA.

oblong: oblongus (adj. A). broadly

oblong: late oblongus. narrowly

oblong: anguste oblongus. very broadly

oblong: perlate oblongus, latissime

oblongus. 107

obrutus (part. A): buried, covered.

obscure (adv.): indistinctly, obscurely.

obscurus (adj. A): dark, shady, indistinct.

observed: observatus (part. A). Observation: observatio (s.f. III), nom. pl. observations.

obsessus (part. A): occupied.

obsitus (part. A): covered over with, beset.

obsoletes (part. B): becoming obsolete, disappearing. obsoletus (adj. A): rudimentary, suppressed, scarcely apparent. obsolete (adv.), obsoletely.

obstipus (adj. A): bent forward, bent to one side.

obstructus (part. A): blocked up, obstructed.

obtectus (part. A): covered over, concealed, protected. *obtegens* (part. B): covering over.

obtexus (part. A): woven over, overspread.

obtritus (part. A): crushed, broken.

Obturamentum (s.n. II): stopper, bung.

obturatus (part. A): stopped up.

obtusangulus (adj. A): obtuse-angled.

obtusatus (adj. A): blunted, obtuse.

obtuse (adv.): obtusely. *obtusiuscule* (adv.): somewhat obtusely. *obtusus* (part. A): blunt, obtuse. 153, 173

Obtutus (s.m. IV): observation, looking upon, seeing.

obvallatus (part. A): surrounded with a wall or rampart.

obverse-lunatus (adj. A): inversely crescent-shaped, the horns projecting away from the axis.

obverse-ovatus (adj. A): obovate.

obversus (part. A): turned towards, directed towards opposite, broader at or towards the top or apex than towards the base or in the lower part.

obvious: manifestus (adj. A). obviously: manifeste (adv.), manifesto (adv.).

obvius (adj. A): at hand, in the way, obvious, exposed.

obvolutus (part. A): wrapped around, e.g. when margins of one organ alternately overlap those of an opposite organ. 367

occasionally: subinde (adv.) 'repeatedly', aliquando (adv.) 'now and then', interdum (adv.) 'sometimes'.

occidentalis (adj. B): west, western.

occlusus (part. A): closed up.

occultans (part. B): hiding. occultus (part. A): hidden.

occupied: occupatus (part. A), obsessus (part. A); *caulis erectus tertio vel quarto supero inflorescentia occupatus*, stem erect with the upper third or quarter by the inflorescence occupied. occupying: occupans (part. B); *discus fundum tubi calycis occupans*, disc the bottom of tube of calyx occupying.

occurring: praesens (adj. B) 'present', dispositus (part. A) 'placed here and there', repertus (part. A) 'found, discovered'.

oceanicus (adj. A): pertaining to the ocean. Oceanus (s.m. II): the ocean; *in oceano atlantico, pacifico et indico*, in the Atlantic Ocean, Pacific Ocean and Indian Ocean.

ocellatus (adj. A): marked with two-coloured spots, having a centre of one colour surrounded by a broad ring of another. Ocellus (s.m. II): eye, distinctly coloured or otherwise noticeable zone in mouth of corolla, small thickening in valve-wall of certain diatoms.

ochraceus (adj. A): ochre-yellow, yellowish-brown.

Ocrea: ocrea (s.f. I), ochrea (s.f. I), lit. 'greave'; *ocreae in apice ramorum tantum visae, adpressae, membranaceae, 6 mm. longae, cito deciduae, ocreae at tip of branches only seen, appressed, membranous, 6 mm. long, quickly falling*.

octavus (adj. A): eighth. octies (adv.): eight times, eightfold. octo (num. adj. indecl.): eight. octo- in both L. and Gk. comp., eighth; *octandrus*, with 8 stamens; *octofarius*, arranged in 8 rows; *octoflorus*, 8-flowered; *octogonus*, 8-angled; *octonervis*, *octonervius*, 8-nerved; *octopetalus*, 8-petaled; *octorrhados*, 8-striped; *octovalvatus*, 8-ovuled. octoni (num. adj.): eight together, eight each; *folia octona*, leaves eight together.

Oculus (s.m. II): eye; *oculo armato*, with the aid of a lens; *oculo nudo*, with the naked eye; *specimina ante oculos*, specimens seen, i.e. before or under the eyes.

odd-pinnate: imparipinnatus (adj. A). 209 -odes: see -OIDES.

odon-, odont-, odonto-: in Gk. comp., toothed, tooth-; *odontochilus*, with toothed lip; *odontoglossus*, with toothed tongue; *odontopetalus*, with toothed petals; *odontorrhizus*, with root or rhizome tooth-bearing. -odon, -odontus: in Gk. comp., -tooth, -toothed; *oligodon*, with few teeth; *macrodon*, with large

tooth or teeth; *macrodontus*, large-toothed; *octodontus*, eight-toothed.  
**Odor** (s.m. III. v.): smell of any kind, odour, perfume, stench, fragrance.  
**odoratus** (part. A), **odorifer** (adj. A), **odorus** (adj. A): having a smell, usually sweet-smelling; *convallariodorus*, fragrant like lily of the valley (Convallaria); cf. *OLENS*, *OLIDUS*, *OSM*, *REDOLENS*.  
**-oecium** (s.n. II): in *Gk. comp.*, -house, -room, e.g. *συνοικιον* latinized as *synoecium* (s.n. II) 'a room where several people dwell together', whence the 'homologized expressions' *androeicum* and *gynoecium* (not *gynaecium*) for the male and female systems of the flower; cf. A. H. Church in *J. Bot. (London)*, 57: 220-223 (1919).

**Oecologia** (s.f. I): ecology.

**Oecotypus** (s.m. II): ecotype.

**oedo-**: in *Gk. comp.*, swollen; *oedocarpus*, with swollen fruit.

**of**: usually expressed by use of genitive case; when 'from' or 'by' can be used instead of 'of', use *e* or *ex* (prep. with abl.).

**officinalis** (adj. B): used in medicine. This epithet more often refers to the past than the present; it is derived from *opificina*, shortened to *officina*, originally a workshop or shop, later a monastic storeroom, then a herb-store, pharmacy or drug-shop.

**Offset**: *propagulum* (s.n. II), *abl. sing.* *propagulo*; cf. **PROLIFER**.

**Offspring**: progenies (s.f. V); cf. **PROLES**.

**often**: saepe (adv.) 'many times', crebro (adv.) 'in close succession', compluribus (adv.), compluries (adv.) 'several times'. **very often**: persaeppe (adv.), plerumque (adv.), saepissime (adv.).

**-oideae**: ending, derived from nom. pl. f. ending of adj. A, added to the stem of the name, or of a synonym, of the type genus of a subfamily to form name of this subfamily, e.g. *Boraginoideae* from *Borago*, *Heliotropioideae* from *Heliotropium*.

**-oides**, **-odes**, **-oideus**: in *Gk. comp.*, like, resembling, having the form or nature of. Generic names ending in **-oides** or **-odes**, e.g. *Nymphaoides*, *Omphalodes*, are treated as feminine.

**Oidium**: *oidium* (s.n. II), *abl. sing.* *oidio*, *nom. pl.* *oidia*, *abl. pl.* *oidiis*.

**Oil**: *oleum* (s.n. II), *gen. sing.* *olei*; *guttae olei*, oil-bodies, drops of oil. **oily**: *oleosus* (adj. A), *oleaceus* (adj. A); *corpora oleosa*, oil-bodies.

**old**: *vetus* (adj. B), *gen. sing.* *veteris*, *abl. sing.* *vetere*, *nom. pl.* *veteres*, *gen. pl.* *veterum*, *abl. pl.* *veteribus*; cf. **AGED**.

**oleaceus** (adj. A): relating to the olive tree, hence oily. *oleagineus* (adj. A), *oleaginous* (adj. A): fleshy and oily, as pulp of the olive (*Olea*). 321  
**o lens** (part. B): smelling, odorous, pleasant or unpleasant; *graveolens*, strong-smelling, ill-smelling; *suaveolens*, sweet-smelling; cf. **ODORATUS**, *OLIDUS*, *REDOLENS*.

**oleosus** (adj. A): oily, full of oil.  
**oleraceus** (adj. A): pertaining to kitchen gardens, either as a pot-herb or vegetable or as a weed. *Olerarium* (s.n. II), *Holerarium* (s.n. II): vegetable garden, kitchen garden.

**Oleum** (s.n. II): oil.  
**olidus** (adj. A): emitting a smell.

**olig-**, **oligo-**: in *Gk. comp.*, few-; *oliganthus*, few-flowered; *oligolepharus*, with few cilia; *oligocarpus*, with few fruits; *oligodon*, *oligodontus*, with few teeth; *oligomerus*, with few parts; *oligophlebius*, with few veins; *oligophyllus*, sparse-leaved; *oligosorus*, with few sori; *oligostachys*, with few spikes.

**olim** (adv.): formerly, in time past.

**olivaceus** (adj. A): olive-green. *oliviformis* (adj. B): olive-shaped.

**Olla** (s.f. I): pot, jar. *olliformis* (adj. B): pot-shaped; cf. **BARREL-SHAPED**, **CUP-SHAPED**.

**omissus** (part. A): neglected, left out, disregarded.

**omnifariam** (adv.), **omnilateraliter** (adv.): on all sides. **omnino** (adv.): altogether, entirely. **omnis** (adj. B): all, every, the whole: *planta omnis glabra*, the whole plant glabrous; in *omnibus quae vidi exemplaribus*, in all specimens which I have seen.

**on**: in (prep. with abl.), used to indicate position generally; *super* (prep. with abl.), used to indicate position directly above or over; *insidens* 'sitting on' takes dat.

**once**: *semel* (adv.). **once more**: *iterum* (adv.).

**onco-**: in *Gk. comp.*, swollen, puffed out, bulky; *oncocarpus*, with swollen fruit; cf. **OEDO**.

**one**: *unus* (adj. A) 'one', *unicus* (adj. A) 'one and no more, unique', *singularis* (adj. B) 'alone, single, one at a time', *solitarius* (adj. B) 'alone, by itself, solitary', *primus* (adj. A) 'first', *singuli* (num. distr. adj.) 'one each', *semel* (adv.) 'once'; *folium solitarium*, leaf solitary; *caulis folio unico ovato*, stem with one ovate leaf; *ad unum*, all together; in *unum*, into one; *flores unus ad sex*, flowers one to six; *flores numero inter unum et sex*, flowers in

number between one and six; *unus tantum*, one only.

**one-**: in *L. comp.*, uni-, in *Gk. comp.*, mon-, mono-; *unicolor*, *monochrous*, of one colour; *uniflorus*, *monanthus*, one-flowered; *unifolius*, *monophyllus*, one-leaved; *unistratus*, *monostromaticus*, one-layered, *unispicatus*, *monostachyus*, with a single spike; *unialatus*, *monopterus*, one-winged; see **MON-**, **UNI-**.  
**one-sided**: *secundus* (adj. A); used of inflorescence with flowers directed to one side only and of other organs with parts so placed, often by twisting. 409, 490

**only** (adj.): *unicus* (adj. A), *unus* (adj. A), *solus* (adj. A), *singularis* (adj. B). **only** (adv.): *tantum* (adv.), *solum* (adv.), *non nisi* (adv.) *modo* (adv.); *nervis laevibus non nisi sub apice scabris*, with nerves smooth only under the tip scabrid.

**onustus** (adj. A): laden, overloaded, full.

**Oogonium**: *oogonium* (s.n. II).

**Oosporangium**: *oosporangium* (s.n. II), *abl. sing.* *oosporangio*, *nom. pl.* *oosporangia*, *abl. pl.* *oosporangis*; *oosporangium brunneum manifeste complanatum*, 0.2-0.4 mm. *longum*, 0.2-0.3 mm. *latum*, 8-9 *liras evidentes sed apice excepto non prominentes exhibens*, *membrana leviter granulata*, oosporangium brown decidedly flattened, 0.2-0.4 mm. long, 0.2-0.3 mm. broad, showing 8-9 ridges evident but except at the tip not prominent, with membrane lightly granulate.

**Oospore**: *oospora* (s.f. I), *abl. sing.* *oospora*, *nom. pl.* *oosporae*, *abl. pl.* *oosporis*; *oospora aureo-fusca ellipsoidea vel globosa jugis 6 leviter alata*, *oospore golden-brown ellipsoid or globose lightly flanged with 6 ridges*; *oospora brunnea vel nigra paulo complanata*, 0.5-0.6 mm. *longa* 0.5 mm. *lata*, 6-8 *liras tenues et prominentes exhibens*, *membrana crassa irregulariter granulata*, oospore brown or black a little flattened, 0.5-0.6 mm. long, 0.5 mm. broad, showing 6-8 ridges thin and standing out, with membrane thick irregularly granulate. According to Horn af Rantzien in *Bot. Notiser*, 109: 218 (1956), the term *oospora* as used by most writers on the fructifications of *Charophyta* should be replaced by *oosporangium*.

**opacus** (adj. A): darkened, dull, not shining, opaque. 299

**opaque**: *opacus* (adj. A), *impellucidus* (adj. A), non *translucidus* (adj. A).

**Ope**: see **OPS**.

**open**: *apertus* (part. A), *reclusus* (part. A). **opening**: *aperiens* (part. B), *dehiscens* (part. B). **Opening**: *orificium* (s.n. II), *acc. sing.* *orificium*, *abl. sing.* *orificio*; *apertura* (s.f. I), *acc. sing.* *aperturam*, *abl. sing.* *apertura*; *foramen* (s.n. III), *acc. sing.* *foramen*, *abl. sing.* *foramine*. These are used for actual openings, but *apertio* (s.f. III) for the process of opening; cf. **CRACK**, **OS**.

**operculate**: *operculatus* (adj. A). **Operculum**: *operculum* (s.n. II), *abl. sing.* *operculo*, *nom. pl.* *opercula*, *abl. pl.* *operculis*, *lit.* 'a cover'; *operculum conicum oblique rostratum capsulam longitudine fere aequans*, *operculum conical obliquely beaked the capsule in length almost equalling*; *ascidia peristomio applanato operculum versus expanso*, *operculo ovato*, *pitchers with the peristome flattened towards the lid expanded, with the lid ovate*.

**opertus** (part. A): hidden, concealed.

**ophio-**: in *Gk. comp.*, pertaining to snakes, snake-like; *ophiocarpus*, with a slender twisted fruit; *ophiolithicus*, growing on serpentine (ophiolite) rock; *ophiophyllus*, with twisted or coiled leaves.

**Opinion**: *judicium* (s.n. II), *sententia* (s.f. I), *opinio* (s.f. III. vi); *auctor hanc sententiam comprobavit*, the author this opinion wholly approved; *mea quidem sententia*, in my opinion (way of thinking) at least; *meo judicio*, in my opinion (judgment); *ut opinio mea est*, as my opinion (supposition) is; cf. **JUDEX**, **SENTENTIA**.

**Oppidum** (s.n. II): town.

**opposite**: *oppositus* (adj. A); *stamina petalis opposita*, stamens opposite to the petals. **opposite-leaved**: *oppositifolius* (adj. A). 475

**Ops** (s.f. III): ability, means, help, support, aid; *frutex ope cirrhorum scandens*, shrub with the aid of tendrils climbing; *motus ciliarum ope*, movement by means of cilia.

**optime** (adv.): well, exceedingly; *cum typo optime congruit*, with the type it agrees well. **optimus** (s. adj. A): best; superl. of **bonus**.

**Opus** (s.n. III): work, labour. **Opusculum** (s.n. II): a little work, pamphlet.

**or**: *vel* (conj.), *-ve* (conj. suffix), *aut* (conj.), *seu* (conj.), *sive* (conj.). *vel*, abbreviated as *v.* or *l.*, is commonly used. Most botanists apparently regard all the above as interchangeable. Following classical usage *aut* generally indicates a more important or real difference, 'an absolute or essential opposition', 'an alternative inconsistent

with another alternative', *vel* or the termination *-ve* a less important difference, often one that 'concerns the expression more than the substance'; they have the sense of 'either . . . or', whereas *seu* and *sive*, abbreviated as *s.*, are essentially conditional with the sense of 'whether or', 'or else', and are less frequent except in book titles; in DC., *Prodromus* 16. i (1864) Alphonse de Candolle used *vel* (or *nunc . . . nunc*) when describing differences in form seen by him on the same specimen or the same branch and *aut* to contrast those of specimens coming from different branches and possibly or certainly from different trees; *pedicelli glabri aut ovarium glandulosum*, pedicels glabrous or ovary glandular; *calcar aut nullum aut saccatum album vel luteum*, spur either lacking or saccate white or yellow; *foliis nunc cordatis nunc obtusis*, with leaves sometimes cordate sometimes blunt; *foliis oblongis ellipticis basi cordatis vel obtusis aut rarius cuneatis*, leaves oblong or elliptic at base cordate or obtuse or rarely [on specimens from a different tree] cuneate; *hortus bogoriensis descriptus seu Retziae editio nova*, Bogor garden described or of Retzia a new edition; *flora seu descriptio plantarum*, flora or description of plants; *Fuci, sive plantarum Fucorum generi a botanicis adscriptarum icones*, Fuci, or illustrations of plants to the genus of Fucus by botanists referred.

**Ora** (s.f. I): coast; *in Mari Pacifico (in Oceano Pacifico) ad oras Peruviae*, in Pacific Ocean on the coasts of Peru; *ad oras Peruanas Oceani Pacifici*, on the Peruvian coasts of the Pacific Ocean. **orange**: aurantiacus (adj. A), croceus (adj. A), calendulinus (adj. A), armeniacus (adj. A), tangerinus (adj. A). **orbatus** (part. A): stripped of, deprived of, *lit.* 'bereaved'; *arbores foliis pro tempore orbatae haud sempervires*, trees for a time stripped of leaves not evergreen.

**orbicular**: orbicularis (adj. B), orbiculatus (adj. A); *see CIRCULAR*. 110

**Orbis** (s.m. III. vii): ring, circle, orb, the world.

**orchideus** (adj. A): orchid-like.

**oculiformis** (adj. B): cask-shaped, q.v.

**Order**: ordo (s.m. III. vi), *nom. pl.* ordinis; *folia § ordine disposita*, leaves in § order (phyllotaxis) arranged.

**ordinary**: usitatus (part. A); *cf. CUSTOM*.

**ordinate** (adv.), **ordinatim** (adv.): in order or succession, in good order, regularly.

**Ordinatio** (s.f. III): arrangement, pattern. **ordinatus** (part. A): arranged.

**oreo-, ores-**: *in Gk. comp.*, pertaining to mountains; *oreophilus*, mountain-loving; *oresbius*, mountain-dwelling.

**Organ**: organum (s.n. II), *nom. pl.* organa; *organa affixionis*, organs of attachment; *organa reproductionis*, organs of reproduction.

**Orgya** (s.f. I): fathom (1.83 m.), toise (6 feet, 1.95 m.), the distance between tips of middle fingers when arms are extended. *orgyalis* (adj. B): fathom-long, 6 feet long or high.

**Oriens** (s.m. III. x): the east. **oriens** (part. B): coming forth, arising, originating. **orientalis** (adj. B): eastern.

**Orifice**: orificium (s.n. II), *acc. sing.* orificium, *abl. sing.* orificio; *cf. OPENING*.

**Origin**: origo (s.f. III. vi), *acc. sing.* originem, *abl. sing.* origine. **original**: originalis (adj. B), originarius (adj. A).

**oriundus** (adj. A): descended from, originating in, derived from; usually with *ab* or *ex*; *cf. ORTUS*, OFFSPRING.

**Ornament**: decus (s.n. III. iv), ornamentum (s.n. II).

**ornatus** (part. A): furnished, equipped, adorned, embellished.

**ornith-**, **ortho-**: *in Gk. comp.*, pertaining to birds, bird-like; *ornithopodus*, bird-footed.

**orth-**, **ortho-**: *in Gk. comp.*, straight, erect; *orthacanthus*, with straight spines; *orthocarpus*, with straight fruits; *orthoneurus*, with straight nerves; *orthotropus*, orthotropous, i.e. when the ovule has a straight axis. 433

**ortus** (part. A): descended from, arisen out of; *cf. ORIUNDUS*.

**orum**: gen. pl. ending of s. II and adj. A. m. n., meaning 'of'; *amicorum*, of the friends, sometimes referring to the Friendly Islands; *anthropophagorum*, of the cannibals; *Baileyorum*, of the Baileys (Liberty Hyde B. and Ethel Zoe B.); *icones fungorum*, illustrations of fungi; *anglorum*, of the English; *germanorum*, of the Germans.

**oryziformis** (adj. B): like a grain of rice.

**Os** (s.n. III. iv), *gen. sing.* oris: mouth.

**Os** (s.n. III. iv), *gen. sing.* ossis: bone.

**oscillans** (part. B): swinging, oscillating; *cf. AESTUANS*. **oscillatorius** (adj. A): capable of swinging movement. 448

**-osis** (s.f. III): suffix used in mycology to coin names of diseases; *Aspergillosis*, disease caused by Aspergillus.

**osm-**: *in Gk. comp.*, scented. **-osma** (s.f. I): in *Gk. comp.*, -scent.

**osseus** (adj. A): bony, of bone-like hardness. **ossiformis** (adj. B): bone-shaped, having a terminal knob.

**ostendens** (part. B): displaying, exposing to view.

**Ostiole**: ostiolum (s.n. II), *abl. sing.* ostiolo, *nom. pl.* ostiola, *abl. pl.* ostiolis, *lit.* 'a little door'; *ostiolum centrale cylindricum apice in fibrillas decolores hyalinasse solutum*, ostiole central cylindric at the tip into fibrils faded or hyaline breaking up; *ostiolo longissimo concolori apice fibroso*, with ostiole very long of one colour at the tip fibrous.

**Ostium** (s.n. II): door, entrance or exit, mouth (of a river); *in ostio fluminis*, in the mouth of the river.

**-osus** (adj. A): suffix indicating abundance or marked development.

**other**: alius (adj. A) 'another among several or many', alter (adj. A) 'the other of two', diversus (adj. A) 'different', ceterus (adj. A) 'the other, the rest'.

**otherwise**: aliter (adv.) 'differently', alio modo, alia ratione 'by another method', cetera (adv.) 'for the rest'; *aliter quam*, otherwise than; *aliter velut in specie*, otherwise just as in the species.

**outer**: exterior (adj. comp.), externus (adj. A). **outermost**: extimus (adj. A).

**Outline**: ambitus (s.m. IV), circumscriptio (s.f. III. vi), circumferentia (s.f. I). 102

**Outside**: pars (s.f. III) exterior. **outside**: externus (adj. A). **on the outside**: extra (adv., class. L.), extus (adv., mod. L.), extrinsecus (adv.); *calyxis tubus extra intraque glaber*, tube of the calyx on the outside and on the inside glabrous; *corolla supra basin extrinsecus glabra*, corolla above the base on the outside glabrous; *perigonium extus pilosum intus glabrum*, perigon pilose outside glabrous inside; *segmenta extus flava lineis purpureis ornata intus omnino purpurea*, segments outside yellow with purple lines ornamented inside entirely purple.

**outwardly**: extrinsecus (adv.).

**ovalis** (adj. B): oval, elliptic, i.e. broadest at the middle, the sides curved and length: breadth usually 2:1. 108

**Ovary**: ovarium (s.n. II), *abl. sing.* ovario, *nom. pl.* ovaria, *abl. pl.* ovaris; *ovarium sessile dimidio superiore pubescens biloculare utroque loculo ovulis 3-8*, ovary sessile in the upper half pubescent 2-chambered, with each cell (loculus) with 3-8 ovules; *ovarium primis vitae stadiis quadriloculare ab apice usque ad imum, mox uniloculare*, ovary in its first stages of life 4-chambered from tip to base, soon one-chambered; *ovarium subglobosum triloculare in stylum longum productum*, ovary sub-

globose 3-chambered into a long style drawn out; *ovarium stipitatum in medio dilatatum apice basique distincae attenuatum hexagono-sulcatum, poris nectariferis ad basem inam tribus*, ovary stalked, in the middle broadened, at tip and base distinctly attenuate, hexagonal-sulcate, with pores nectar-bearing at the very base three; *ovarium inferum vel semisuperum vel superum*, ovary inferior or half-superior or superior; *see PLACENTA*. **ovary-bearing**: ovariifer (adj. A).

**ovate**: ovatus (adj. A). **broadly ovate**: late ovatus. **narrowly ovate**: anguste ovatus. **very broadly ovate**: perlate ovatus, latissime ovatus. 109

**over**: super (adv., prep. with acc.) 'extending over'; plus quam (adv.) 'more than'. **overall**: ubique (adv.). **overhanging**: imminens (part. B), impendens (part B), superpendens (part. B). **overlapping**: imbricatus (part. A), superpositus (part. A); *cf. INCUBUS*, SUCUBUS. **overlooked**: praetermissus (part. A). **overmuch**: nimis (adv.). **overspread**: obductus (part. A), obtectus (part. A).

**overtopped**: superatus (part. A), q.v. **overtopping**: superans (part. B), excedens (part. B); *stylis antheras longe superantes*, style the anthers long overtopping. **ovi-**: *in L. comp.*, egg-; *oviformis*, egg-shaped; *oviflorus*, with egg-shaped flowers.

**ovinus** (adj. A): pertaining to sheep.

**ovoid**: ovoideus (adj. A). 25

**ovulate**: ovulatus (adj. A); *ovarium pauciovulatum, ovulis pendulis*, ovary few-ovuled, with the ovules pendulous.

**Ovule**: ovulum (s.n. II), *abl. sing.* ovulo, *nom. pl.* ovula, *abl. sing.* ovulis; *ovula in quoque loculo duo collateralia vel plurima biseriatim superposita, rarius in loculis solitaria vel numerosissima irregulariter conferta, anatropa vel in paucis generibus orthotropa, basi medio vel apice lateraliter affixa vel rarius horizontalia*, ovules in each loculus two side by side or many in two series with one ovule above the other, rarely in the loculi solitary or most numerous irregularly crowded together, anatropous or in a few genera orthotropous, at base in the middle or at the top laterally fastened or rarely horizontal; *cf. Ovary, PLACENTA*.

**own, its**: suus (adj. A), proprius (adj. A). **Ozonium**: ozonium (s.n. II).

P

**pabularis** (adj. B): fit for fodder. **Pabulum** (s.n. II): food, nourishment, fodder.

**pachy-**: in Gk. *comp.*, thick-, stout-; *pachydermus*, *pachydermicus*, thick-skinned, with wall of cell thicker than cavity; *pachycarpus*, with thick pericarp, thick-fruited; *pachycladus*, with thick branches; *pachyphylus*, thick-leaved; *pachypodus*, with a thick support (petiole, peduncle, pedicel); *pachypterus*, with stout wings; *pachyrrhizus*, with thick root or rhizome; *pachystachys*, *pachystachyus*, with thick spike; *pachystylus*, with thick style.

**packed**: contiguous (adj. A) 'touching', *farctus* (part. A) 'stuffed', *impletus* (part. A) 'filled full'; *cellulae arcte contiguae*, cells closely packed; *cellulae guttis olet impletæ*, cells packed with oil-bodies.

**paegma** (s.n. III. ix): in Gk. *comp.*, play (although *paegnum* (s.n.) 'plaything, toy', may be intended).

**paene** (adv.): nearly, almost.

**Page**: *pagina* (s.f. I), gen. sing. *paginae*, abl. sing. *pagina*, nom. pl. *paginae*, abl. pl. *paginis*.

**pagina** (s.f. I): page, surface.

**Paint**: *pigmentum* (s.n. II). **painted**: *fucatus* (part. A), *pictus* (part. A).

**Pair**: *par* (s.n. III); *paribus oppositis*, in opposite pairs; 'in pairs' can be expressed by *binatum* (adv.). **paired**: *binatus* (adj. A), *bini* (adj. A. pl.), *gemellus* (adj. A), *geminus* (adj. A), *geminatus* (adj. A), *jugus* (adj. A).

**palaceus** (adj. A): margin-attached; attached by the edge to its support, as the blade of a non-peltate leaf to its petiole or of a spade (*pala*) to its sleeve and handle. 450

**palaeoneus** (adj. A): shrimp-red (H.C.C. 6.16).

**palaeo-**: in Gk. *comp.*, ancient, old; *palaeobotanicus*, relating to fossil plants; *palaeotropicus*, relating to the Old World tropics; cf. NEO-.

**palaris**: relating to stakes, stake-like; *radix palaris*, tap-root.

**Palate**: *palatum* (s.n. II), abl. sing. *palato*, *palatus* (adj. A): variant of *PALACEUS* used by Diels.

**pale**: *dilutus* (part. A), *pallens* (part. B), *pallidus* (adj. A). **becoming pale**: *pallescens* (part. B).

**Pale**, **Palea**: *palea* (s.f. I), abl. sing. *palea*, nom. pl. *paleae*, abl. pl. *paleis*.

**palaceus** (adj. A): chaffy, of chaff-like texture. 293

**palely**: *pallide* (adv.), dilute (adv.).

*paliformis* (adj. B): stake-like; *cellulae paliformes*, palisade cells.

**Palisade**: *vallum* (s.n. II).

**pallens** (part. B), **pale**, *pallescens* (part. B): becoming pale, *pallide* (adv.): palely. *pallidus* (adj. A): pale.

**Palma** (s.f. I): palm of the hand (*hence* width of 3 in.), a palm-tree; *palma scandens gracilis sparse armata glabra ad 2 m. alta*, palm climbing slender scantly armed glabrous to 2 m. high; *palma elata erecta valida, trunco annulato spinis nigris horrido*, palm tall erect strong-growing, with trunk annulate bristling with black spines. *palmaris* (adj. B): equaling the width of the palm of the hand, about 3 in. (8 cm.).

**palmatim** (adv.): palmately. *palmatus* (adj. A): palmate, i.e. lobed or divided in the manner of an outspread hand with the sinuses between the lobes pointing to the place of attachment. 196, 354

**palud-**: in L. *comp.*, pertaining to marshes; *paludicola*, a dweller in marshes; *paludigena*, marsh-born, growing in marshes; *paludosus*, marshy, swampy, boggy. *Palus* (s.f. III. ii): marsh, swamp, bog, fen, pool. *palustris* (adj. B): swampy, marshy: *palustria*, swampy places.

**Palyologia** (s.f. I): the study of pollen and spores.

**Pamphlet**: *libellus* (s.m. II).

**pan-**: in Gk. *comp.*, all; *pan tropicus*, throughout the tropics.

**panduratus** (adj. A), *panduriformis* (adj. B): fiddle-shaped, i.e. broadest near the top, curving inwards in the lower part, then curving outwards again above the base. 128

**Panicle**: *panicula* (s.f. I), acc. sing. *paniculam*, gen. sing. *paniculae*, abl. sing. *panicula*; *panicula ramosissima*, *erecta vel demum nutans*, *folia superans*, panicle most branched erect or at length nodding, overtopping the leaves; *capitula in paniculam terminalem amplam disposita*, heads in a panicle terminal ample arranged. **panicle-like**: *paniculiformis* (adj. B). *paniculate*: *paniculatus* (adj. A). *paniculately*: *paniculatum* (adv.).

**panniformis** (adj. B), *pannous* (adj. A): felted, with appearance or texture of felt. *papaverinus* (adj. A): poppy red (H.C.C. 16).

**paper**: *papyraceus* (adj. A), *chartaceus* (adj. A). 311

**papilionaceus** (adj. A): butterfly-like, papilionaceous, with corolla like that of pea, bean, etc.; see Fig. 34 f (p. 408).

**Papilla**: papilla (s.f. I), nom. pl. *papillæ*, abl. pl. *papillis*.

**papillatus** (adj. A): papillate, having papillæ. *papilliformis* (adj. B): nipple-like. *papillosus* (adj. A): papillose, covered with papillæ. 269

**Pappus** (apical tuft of hair or bristles or homologous appendages on fruits of Compositae and Valerianaceae): *pappus* (s.m. II), gen. sing. *pappi*. On a seed, such a tuft is termed *COMA*, q.v.; *pappus uniserialis albus setaceo-paleaceus breviter plumosus*, pappus in one series white bristle-like and chaffy shortly plumed; *pappus biserialis*, pappus in two series; *pappus duplex*, pappus double; *pappus multiserialis*, pappus in many series; *pappi series exterior cupulam 1 mm. altam fimbriatam formans, interior e paleis multis basi cohaerentibus longis superne plumosus constans*, of the pappus the outer series forming a cup 1 mm. high fimbriate, the inner composed from pales many at base cohering long in the upper part plumed; *pappus multiserialis basi in annulum conferruminatus*, pappus many-seried at base into a ring cemented together; *pappi paleae 2-seriales, exteriores ellipticae tenerae persistentes, interiores ovatae caducae*, of the pappus the pales in 2 series, the outer elliptic thin persistent, the inner ovate deciduous; *pappi duplicitis setae extiores 1 mm. longae scabridae, interiores 1 cm. longae plumosae, omnes nigrae*, of the double pappus the outer bristles 1 mm. long scabrid, the inner 1 cm. long plumose, all black.

**Papula** (s.f. I): pustule, a relatively large papilla or nipple-like projection. *papulosa* (adj. A): pustular.

**papyraceus** (adj. A): papery, as most leaves are when dried. 311

**Par** (s.n. III): pair; *internodio inter par infimum et infimum proximum 1 cm. longo*, with internode between the lowest pair of leaflets and the next lowest 1 cm. long; *tria paria pinnarum*, three pairs of pinnae; *paribus infimis deflexis*, with the lowest pairs deflexed.

**para-**: in Gk. *comp.*, by the side of, near, compared with (*sometimes implying superiority*), similar to, as in generic names *Par aristolochia* (near *Aristolochia*), *Paranephelium* (near *Nephelium*), etc. **parabolicus** (adj. A): used of more or less ovate leaves abruptly contracted below the rounded apex; cf. *BELL-SHAPED*. 117

**parallel**: *parallelus* (adj. A); *parallelus ad axem*, parallel with axis. *parallel-*

*nerved, -veined*: *parallel nervius* (adj. A), *paralleloneurus* (adj. A), *parallelivenus* (adj. A), in a parallel manner: *parallele* (adv.). 350

**Paramylon**: *paramylon* (s.n. II); *granum paramyli*, paramylon body.

**Paranema**: *paranema* (s.n. III. xi), nom. pl. *paranemata*, abl. pl. *paranematibus*; *paranemata* (see *paraphyses*) *praesentia*, *paranemata* (or *paraphyses*) present.

**Paraphyllum**: *paraphyllum* (s.n. II), nom. pl. *paraphyllia*, abl. pl. *paraphylliis*.

**Paraphysis**: *paraphysis* (s.f. III. vii), abl. sing. *paraphyse*, nom. pl. *paraphyses*, abl. pl. *paraphysibus*; *paraphyses simplices septatae 100 μ longae, basim versus 6 μ late, apicem versus 4 μ late*, *paraphyses simple septate* 100 μ long, towards the base 6 μ broad, towards the tip 4 μ broad; *paraphysibus brevibus articulatis copiosis*, with *paraphyses* short articulated abundant.

**Parasite**: *parasitus* (s.m. II), *parasita* (s.f. I). **parasitic**: *parasiticus* (adj. A). In referring to hosts of fungi the adj. *parasiticus* is usually omitted, being understood, in with abl. being used alone; *parasitatur in arboribus variis at praesertim in Corylo, Fraxino et Betula*, it plays the parasite on various trees but especially *Corylus*, *Fraxinus* and *Betulus*; *frequens in pagina aversa foliorum Aceris*, frequent on lower surface of leaves of *Acer*; *in foliis vivis, in (on) living leaves*; cf. *HOST*.

**Parastas** (s.f. III): coronal ray of Passiflora, lit. 'doorpost'; *parastades filiformes albae*, coronal rays thread-like white.

**paratus** (part. A): prepared, provided with, equipped with.

**parce** (adv.): sparingly, moderately.

**parcus** (adj. A): sparing, moderate, frugal.

**perchment-like**: *pergamaceus* (adj. A), *pergamenus* (adj. A).

**Parenchyma**: *parenchyma* (s.n. III), abl. sing. *parenchymate*; *cellulae pigmentosae in parenchymate numerosae*, pigmented cells in the parenchyma numerous. **parenchymatous**: *parenchymatus* (adj. A), *parenchymaticus* (adj. A).

**Parent**: *parentis* (s.m.f. III. ix), gen. sing. *parentis*, abl. sing. *parente*, nom. pl. *parentes*, abl. pl. *parentibus*; *hybrida inter parentes crescent ac optime intermedia*, hybrid among the parents growing and beautifully intermediate.

**parental**: *parentalis* (adj. B).

**pariens** (part. B): bringing forth, producing.

**Paries** (s.m. III): wall. **parietalis** (adj. B): parietal, borne on the wall; *chromatophoro parietali*, with parietal chromatophore.

**parilis** (adj. B): equal, like.

**paripinnatus** (adj. A): paripinnate, i.e. pinnate and ending with a pair of leaflets (not a single terminal leaflet). 210

**Parish**: parochia (s.f. I).

**pariter** (adv.): equally, in like manner.

**paroecius** (adj. A), **paroicus** (adj. A): paroecious, i.e. having male and female organs in the same inflorescence but separate, the male ones in the axils of lower bracts.

**Part**: pars (s.f. III), *abl. sing. parte, nom. pl. partes, abl. pl. partibus; ex parte, in part, partly; pro parte maiore, for the greater part; pro parte minore, for the smaller part; in omnes partes, omnibus partibus*, in all respects, altogether; *nulla parte*, not at all.

**parted**: partitus (part. A), q.v. 195

**partial**: partialis (adj. B).

**partibilis** (adj. B): divisible, ultimately separating or easily separated.

**Particle**: particula (s.f. I).

**particular**: peculiaris (adj. B). **particularly**: praesertim (adv.), praecipue (adv.), imprimis (adv.).

**partim** (adv.): partly, in part.

**Partitio** (s.f. III): a division.

**Partition**: dissepimentum (s.n. II), dis septum (s.n. II), septum (s.n. II).

**partitus** (part. A): partite, divided into parts, the division reaching almost to the base or into the inner  $\frac{1}{3}$ ; *multi-partitus*, divided into many parts; *palmitapartitus*, palmately partite; *pin natipartitus*, pinnately partite. 195, 199

**partly**: partim (adv.), ex parte, in parte. **parum** (adv.): too little, not enough, not very.

**parumper** (adv.): for a short time.

**Parvitas** (s.f. III): smallness.

**parvus** (adj. A): little, small, puny.

**Pascuum** (s.n. II): pasture. **pascuus** (adj. A): pastoral, relating to pastures. **passim** (adv.): at random, here and there, far and wide, everywhere.

**passing into**: transiens (part. B), confluens (part. B), decrescens (part. B); *ovarium cum disco confluens*, ovary into the disc flowing; *ovarium sensim in stylis ovario fere aequilongos transiens*, ovary gradually into styles almost as long as the ovary passing; *lamina basi in petiolum gradatim decrescens*, blade at base into the petiole gradually diminishing.

**past**: praeteritus (part. A).

**pastoral**: pascuus (adj. A). **Pasture**: pascuum (s.n. II), *abl. pl. pascuus*.

**Patella**: patella (s.f. I), *lit. 'small dish, plate'*.

**patelliformis** (adj. B): dish-shaped, saucer-shaped; cf. PELVIFORMIS. 76

**patens** (part. B): spreading, outspread, diverging from the axis at almost 90°. **patenter** (adv.): patently. **patentissimus** (adj. A): very widely spreading. 428

**pateriformis** (adj. A): saucer-shaped.

**patho-**: in *Gk. comp.*, relating to suffering and to diseases.

**Patria** (s.f. I): native land.

**Pattern**: ordinatio (s.f. III): *ordinatione spinarum diversa*, with a different pattern of spines.

**patulus** (adj. A): spread, outspread.

**pauci-**: in *L. comp.*, few-; *paucidentatus*, few-toothed; *pauciflorus*, few-flowered; *paucifolius*, few-leaved; *paucijugus*, with few pairs of leaflets; *paucinervius*, *paucinervius*, few-nerved; *paucipunctatus*, with a few spots; *paucus* (adj.), very few.

**paucus** (adj. A): few.

**paulatim** (adv.): little by little, gradually; see SENSIM.

**paulisper** (adv.): for a short time.

**paulo** (adv.), **paullo** (adv.): by a little, somewhat, a little.

**pausiacus** (adj. A): olive-green.

**pavoninus** (adj. A): peacock-eyed.

**Pea**: pisum (s.n. II); *magnitudine pisi*, the size of a pea. **pea-green**: pisinus (adj. A), pisaceus (adj. A). **pea-shaped**: pisiformis (adj. B).

**peach-coloured**: persicus (adj. A).

**pear-shaped**: pyriformis (adj. B). 11

**pearly**: margaritaceus (adj. A), perlarius (adj. A).

**Peat-bog**: turbarium (s.n. II).

**peaty**: turfosus (adj. A). **Peaty Moor**: turfosum (s.n. II).

**peptic**: pecticus (adj. A).

**pectinatim** (adv.): in the form of a comb.

**pectinatus** (adj. A): pectinate, i.e. with narrow close-set divisions like a comb. 200

**peculiaris** (adj. B): special, particular, not held in common with others.

**pedalis** (adj. B): a foot long (about 30 cm.).

**pedatus** (adj. A): pedate, i.e. palmate, q.v., but with the lateral lobes or divisions themselves divided. **pedati-**: in *L. comp.*, pedately; *pedatinervius*, pedately nerved. 197

**Pedicel**: pedicellus (s.m. II), *abl. sing. pedicello, nom. pl. pedicelli, acc. pl. pedicellos, abl. pl. pedicellis*; *pedicelli 5 cm. longi filiformes glabri*, pedicels 5 cm. long thread-like glabrous; *pedicellis glabris perigonium aequantibus vel*

**eo brevioribus**, with pedicels glabrous equalling the perigon or shorter than this; *spatha pedicellos initio aequans, demum is duplo brevior*, spathe at first equaling the pedicels, ultimately twice shorter than these (i.e.  $\frac{1}{2}$  their length). **pedicularis** (adj. B), **pedicellatus** (adj. A): provided with a pedicel, pedicelled.

**Peduncle**: pedunculus (s.m. II), *abl. sing. pedunculo, nom. pl. pedunculi, abl. pl. pedunculis*; *pedunculus elongatus terminalis glaber*, peduncle elongated terminal glabrous; *pedunculi terminales et axillares nudi glabri uniflori*, peduncles terminal and axillary naked (i.e. without bracts) glabrous one-flowered; *pedunculis patentibus, inferioribus silicula duplo saltet longioribus*, with peduncles spreading, the lower at least twice longer than the silicle; cf. SCAPE.

**peduncularis** (adj. B), **pedunculatus** (adj. A): provided with a peduncle, pedunculate.

**pelagicus** (adj. A): pertaining to the sea.

**Pellicle**: pellicula (s.f. I), *abl. sing. pellicula*; *pileus pellicula viscosa absitus*, pileus with a viscid pellicle covered; *caro sub pellicula flava*, flesh under the pellicle yellow.

**Pellis** (s.f. III): skin.

**pellucidus** (adj. A): translucent but not hyaline.

**petlate**: peltatus (adj. A), peltiformis (adj. B); cf. PALACEUS, SHIELD-SHAPED. 437

**pelviformis** (adj. B): basin-shaped; cf. PATELLIFORMIS.

**penarius** (adj. A): relating to provisions; *regione penaria manifesta*, with well-marked storage region.

**pencilled**: lineolatus (adj. A), q.v.

**pendulous**: pendens (part. B), pendulus (adj. A), cernuus (adj. A) 'with face towards the ground', nutans (part. B) 'nodding'. 406-408

**penetrans** (part. B): penetrating.

**penicillatus** (adj. A), **penicilliformis** (adj. B): shaped like a pencil or an artist's camel-hair brush. **Penicillum** (s.n. II): brush-like tuft of hairs.

**Peninsula**: peninsula (s.f. I), paeninsula (s.f. I); *flora Peninsulae Balcanicae*, flora of the Balkan Peninsula.

**penitus** (adj. A): inward, inner, interior.

**penitus** (adv.): inwardly, in the inside, deeply, completely.

**pennatus** (adj. A): pinnate, q.v.; **pennatus** is preferred in class. L., *pinnatus* in bot. L.; *penna* (s.f. I) and *pinna* (s.f. I) 'feather, wing, pen', were often used indiscriminately.

**penninervis** (adj. B): pinnately nerved. **pennivenius** (adj. A): pinnately veined.

**penta-**: in *Gk. comp.*, five-; **pentacarpus**, 5-fruited; **pentacyclus**, with 5 twists; **pentadactylus**, digitately divided into 5 finger-like lobes; **pentagynus**, with 5 styles or carpels; **pentamerus**, with parts in fives; **pentandrus**, 5-stamened; **pentapetalus**, 5-petaled; **pentapterus**, 5-winged; **pentasepalus**, 5-sepaled; **pentaspernus**, 5-seeded; **pentastachys**, with 5 spikes; **pentastichus**, in 5 series or lines; **pentastictus**, 5-spotted; see FIVE-, QUINQU-.

**Pepo** (s.m. III): pumpkin, fruit of Cucurbitaceae.

**per** (prep. with acc.): through, throughout, all over, all along, during, by means of, by, on account of; *flores per ramos in ramulis abbreviatis congesti*, flowers crowded all along the branches on branchlets abbreviated; *species per regiones temperatas calidioresque dispersae*, species through regions temperate and warmer dispersed. **per**: in *L. comp.*, through, very, completely, exceedingly; *peraeque*, quite equally, uniformly; **peralbus**, pure white; **peranguste**, very narrowly; **perarius**, very dry; **perasper**, very rough; **percoloratus**, deeply coloured; **percrudus**, quite immature; **perdifficiliter**, with great difficulty; **perdulcis**, very sweet; **perdurus**, very hard; **perelegans**, very elegant; **peregrine**, very sparingly; **pergrandis**, very large; **peridoneus**, very suitable, well adapted; **permale**, very badly; **permultum**, very much; **perpallidus**, very pale; **perparvus**, very small; **perutilis**, very useful.

**peragratus** (part. A): traversed.

**perceptible**: perceptibilis (adj. B); *nervis exilibus vel exilissimis vix perceptibilibus*, with nerves feeble or very feeble scarcely perceptible; cf. INVISIBLE, MANTICESTUS.

**percurrent** (part. A): percurrent, i.e. extending the whole length of an organ but not continued beyond it; *folia costa percurrente*, leaves with a percurrent midrib; *costa percurrents haud excurrens*, midrib percurrent never excurrent.

**perducens** (part. B): leading through, traversing; **perductus** (part. A): traversed, conducted.

**perdurans** (part. B): persistent, enduring.

**peregrinus** (adj. A): foreign.

**perennating**: perennans (part. B). **perennial**: perennans (adj. B).

**perfecte** (adv.): fully, completely. **perfectus** (adj. A): complete, hermaphrodite, perfect.

**perfoliate**: perfoliatus (adj. A). 443

**perforatus** (adj. A): pierced with holes or pores or sprinkled with translucent dots; cf. *PERTUSUS*.

**perfoſſus** (part. A): pierced through, hollow; cf. *FISTULOSUS*.

**pergamaceus** (adj. A), **pergamenus** (adj. A), **pergamentaceus** (adj. A): parchment-like; cf. *PAPYRACEUS*.

**perhaps**: fors (adv.), forsan (adv.), fortasse (adv.), forte (adv.), forstian (adv.).

**perhiemans** (part. B): persisting through the winter, remaining all winter.

**peri-**: in Gk. *comp.*, about, around, surrounding.

**Perianth**: perianthium (s.n. II), *gen. sing.* *perianthii*, *abl. sing.* *perianthio*, *nom. pl.* *perianthia*, *abl. pl.* *perianthiis*. Applied by Linnaeus and his contemporaries to the calyx exclusive of the corolla, but by Mirbel, Robert Brown and later authors to the perigon, i.e. the floral envelope outside the stamens when not differentiated into calyx and corolla, and applied in Hepaticae to the colesule, i.e. the inflated envelope around the archegonium; *perianthium quadripartitum*, *persistens*, perianth (calyx) 4-parted, persistent; *perianthium infundibulare sex-partitum corollinum viridulum extus pilosum*, perianth (perigon) funnel-shaped 6-parted corolla-like greenish on the outside pilose; *perianthia basi nuda* (i.e. a *bractea remota*) *foliis caulinis subaequilonga pyriformia, tota longitudine acute 5-carinata, laevissima, apice rotundata obsolete rostellata*, perianths (colesules) naked at base (i.e. at a distance from the bract) about as long as the stem-leaves, for the whole length acutely 5-keeled, quite smooth, at the rounded apex obsoletely beaked; see *PERIGON*.

**Pericarp**: pericarpium (s.n. II), *gen. sing.* *pericarpii*, *abl. sing.* *pericarpio*.

**perichaetial**: perichaetials (adj. B); *bracteae perichaetales*, *perichaetii bracteae*, perichaetial bracts. **Perichaetium**: perichaetium (s.n. II), *abl. sing.* *perichaetio*.

**Peridiolum**: peridiolum (s.n. II), *abl. sing.* *peridiolo*.

**Peridium**: peridium (s.n. II), *abl. sing.* *peridio*.

**Perigon**: perigonium (s.n. II), *gen. sing.* *perigonii*, *abl. sing.* *perigonio*; *perigonium deciduum vel persistens hexaphyllum*, perigon deciduous or persistent six-leaved; *perigonii phylla (segmenta) oblonga*, leaves (segments) of the perigon oblong; *stamina longitudine 3 perigonii partes aequantia*, stamens in length

equalling 3 of the perigon; *stamina perigonio duplo breviora*, stamens twice shorter than (i.e. half the length of) the perigon; *filamentis perigonum duplo superantibus, ima basi inter se et cum perigonio coalitis*, with filaments twice exceeding the perigon, at the very base between themselves and with the perigon united; see *PERIANTH*.

**perigonial**: perigonialis (adj. B); *bracteae perigoniae*, perigonial bracts. **Perigynium**: perigynium (s.n. II), *gen. sing.* *perigynii*, *abl. sing.* *perigynio*. **perigynous**: perigynus (adj. A). 474

**Period**: periodus (s.f. II). **Peripheria** (s.f. I): circumference; *chloroplastus plus quam dimidium peripheriae cellulae circumiens*, chloroplast more than half of the circumference of the cell encircling; *peripheriam versus*, towards the circumference. **periphericus** (adj. A), **peripheralis** (adj. B): pertaining to the boundary or outer surface, peripheral.

**Periphysis**: periphysis (s.f. III), *nom. acc.* *pl.* *periphyses*, *abl. pl.* *periphysibus*. **Periplast**: periplastus (s.m. II); cf. *PROTOLAST*.

**peristomate**: peristomatus (adj. A). **Peristome**: peristomium (s.n. II), *gen. sing.* *peristomii*, *abl. sing.* *peristomio*; *peristoma* (s.n. III), *gen. sing.* *peristomatis*, *abl. sing.* *peristomate*; *peristomum duplex, exterius e dentibus crassis trabeculatis constans, interius obsoletum*, peristome two-fold, the outer from teeth thick cross-barred made, the inner obsolete; see *PITCHER*.

**Peritheciun**: peritheciun (s.n. II), *abl. sing.* *perithecio*, *nom. pl.* *perithecia*, *abl. pl.* *peritheciis*; *perithecia globosa folii parenchymatis omnino immersa*, perithecia globose completely sunk in the parenchyma of the leaf; *perithecia numerosa in hyphis mycelii lateralia subglobosa hyalina levia*, perithecia many lateral in hyphae of the mycelium almost globose hyaline smooth.

**peritropus** (adj. A): directed horizontally. 432

**peritus** (adj. A): skilful, experienced.

**perlarius** (adj. A): pearly.

**perlate** (adv.): very broadly.

**permanens** (part. B): persistent, lasting.

**pernicious** (adj. A): destructive, ruinous; cf. *NOXIOUS*.

**peronatus** (adj. A): thickly overlaid with a woolly substance that becomes mealy. 283

**perpaucus** (adj. A): very few, very little.

**perpaulum** (adv.): a very little indeed. *Perpaulum* (s.n. II): a very little; *perpaulo*, by a very little.

**perpendicularis** (adj. B): perpendicular, used of organs which go downwards; for stems, etc., *erectus*, *strictus*, etc., are used. 396

**perperam** (adv.): incorrectly, falsely.

**perpetuo** (adv.): constantly, uninterrupted, always.

**perplexus** (adj. A): confused, intricate, obscure.

**perplurimus** (adj. A): very many.

**perquam** (adv.): as much as possible, extremely.

**perruptus** (part. A): broken through.

**persaepē** (adv.): very often.

**persicinus** (adj. A): peach-coloured.

**persistent, persisting**: persists (part. B), *perdurans* (part. B), *permanens* (part. B), *remanens* (part. B); *calyx ad maturitatem fructus persistens*, calyx to the ripening of the fruit remaining; *folia persistentia*, leaves evergreen. 342

**personatus** (adj. A): wearing a mask, i.e. with a 2-lipped corolla having a prominent palate, 'so that when compressed the whole resembles the mouth of a gaping animal' (Lindley), as in many members of the *Scrophulariaceae*, the *Personatae* of Linnaeus or with spore-bearing pustules bursting through the epidermis like little open mouths. 67

**perspicue** (adv.): evidently, manifestly, decidedly. **perspicuous** (adj. A): transparent, clear, evident.

**pertinens** (part. B): belonging to. **pertinet** (3rd person sing. indic. pres. of *pertineo*): it belongs to.

**pertusus** (part. A): having holes or slits, perforated. 244

**perulatus** (adj. A): having buds covered with scales (perules).

**Perule**: perula (s.f. I), *nom. pl.* *perulae*, *abl. pl.* *perulis*; *rami hornotini basi perulis scariosis triangularibus vel lanceolatis 1-2 cm. longis cincti*, branches of current year girdled at base with perules (scales of leaf bud) scarious triangular or lanceolate 1-2 cm. long.

**pervagatus** (part. A): spread out, widespread, common.

**pervalvaris** (adj. B): pervalvar, transapical.

**perius** (adj. A): perforate, having a passage-way through.

**pervulgatus** (part. A): very common.

**Pes** (s.m. III. ii): foot; English foot, 30.5 cm.; Paris foot, 32.5 cm.; *caulis duo pedales vel ultra altus*, stem 2 feet or more high; *pes caprae*, foot of a goat; *pes tigris*, foot of a tiger; *ad pedes montis*, at the foot of the mountain.

**pesimius** (adj. A): very bad, utterly bad; superl. of *MALUS*.

**Pest**: pestis (s.f. III).

**Petal**: petalum (s.n. II), *gen. sing.* *petali*, *abl. sing.* *petalo*, *nom. pl.* *petala*, *gen. pl.* *petalorum*, *abl. pl.* *petalis*; *petalum latum obovatum*, petal broad obovate; *petala cum sepalis alterna iisque breviora*, *ad basin disci inserta, in aestivatione aperta, sub anthesi erecta*, petals alternating with the sepals and shorter than these, at the base of the disc inserted, in aestivation open, at anthesis erect; *petala lutea sepalis longiora, 1 cm. longa*, *petitia, obovata, apice rotundata, nectario squama oblonga obtecto*, petals yellow longer than the sepals, 1 cm. long, outspread, obovate, at the tip rounded, with the nectary covered by an oblong scale; *petalorum lamini obovatis ungue suo paulo brevioribus*, with the blades of the petals obovate shorter a little than the claw; *petalis numerosis cuneatis apice rotundatis aureis glabris calyx patente villoso longioribus*, with petals numerous cuneate at the tip rounded golden glabrous longer than the outspread villous calyx. **petalinus** (adj. A), **petaloideus** (adj. A): petal-like. 58

**petiolaneus** (adj. A): consisting of a petiole only. **petiolaris** (adj. B): borne on a petiole or relating to a petiole, petiolar.

**petiolatus** (adj. A): provided with a petiole, petiolate. 467

**Petiole**: petiolus (s.m. II), *gen. sing.* *petioli*, *abl. sing.* *petiolo*, *nom. pl.* *petioli*, *acc. pl.* *petioli*, *gen. pl.* *petiolorum*, *abl. pl.* *petiolis*; *petiolus gracilis ad 5 cm. longus, quam lamina multo brevior, supra planus subitus carinatus, glaber, viridis*, petiole slender to 5 cm. long, than the blade much shorter, above flat beneath keeled, glabrous, green; *petiolus valde sulcatus, in foliis exterioribus et meditis distincte alatus*, petiole strongly grooved, in outer and middle leaves distinctly winged; *petiolus basi teres paulum incrassatus, laminam versus supra applanatus*, petiole at base terete little thickened, towards the blade flattened out; *lamina basi sensim in petiolum attenuata*, blade at base gradually attenuate into the petiole; *petiolus difficilime a lamina distinguendus*, petiole with extreme difficulty from blade to be distinguished; *petioli foliorum basali lamina quarta vel tertia parte breviores*, petioles of basal leaves shorter than the blade by a quarter or third part; *petioli brevissimi*, petioles extremely short; *folia basi in petiolum superne alatum inferne sensim angustatum contracta*, leaves at base contracted into a petiole winged in the

upper part gradually narrowed in the lower part; *petiolaris glabris alatis 10 cm. longis*, with petioles glabrous winged 10 cm. long.

**petiolulate**: petiolulatus (adj. A). **Petiolule**: petiolulus (s.m. II); declined like *petiolus*.

**Petra** (s.f. I): rock, stone. **petraeus** (adj. A): growing among rocks. **petrensis** (adj. B); found among rocks. **Petrosa** (s.n. II. pl.): rocky places. **petrosus** (adj. A): full of rocks, rocky. **phae-**, **phaeo-**: in Gk. comp., dark-; **phaeadenius**, with dark-coloured glands; **phaeanthus**, dark-flowered; **phaeocephalus**, with dark heads; **phaeglossus**, dark-tongued; **phaeoneurus**, with dark-coloured nerves; **phaeus**, dark-coloured, dark grey.

**Phaeophorum** (s.n. II): chromatophore. **phaner-**: in Gk. comp., manifest, visible, easily seen; **phanerantherus**, with protruding anthers; **phanerophlebius**, conspicuously veined; **phanerosorus**, with conspicuous sori.

**Phialide**: phialis (s.f. III. ii), gen. sing. **phialidis**, abl. sing. **phialide**.

**-philus**: in Gk. comp., -loving; **dendrophilus**, tree-loving, epiphytic; **xerophilus**, loving dry places.

**-phlebius**: in Gk. comp., -veined; **dictyophlebius**, net-veined. **phlebo-**: in Gk. comp., vein-; **phlebocarpus**, vein-fruited, with veined fruits; **phlebophyllus**, vein-leaved, with conspicuously veined leaves.

**phloginus** (adj. A): phlox-pink (H.C.C. 6. 25).

**phoeniceus** (adj. A): bright red, scarlet.

**-phorum** (s.n. II): in Gk. comp., -carrier, signifying a part which bears some other parts, a stalk or support; **gynophorum**, gynophore, the support of the gynoecium. **-phorus** (adj. A): in Gk. comp., -bearing, -carrying; **lophophorus**, crest-bearing.

**photographic**: photographicus (adj. A). **-phragma** (s.n. III. ix): in Gk. comp., -screen, -partition.

**phyco-**: in Gk. comp., relating to Algae, algal.

**Phycologia** (s.f. I): phycology, algology, the study of Algae.

**Phycoma** (s.n. III): the whole plant-body of an alga; *thallus*; *phycoma sphaericum duriusculum lubricum intus non distinete zonatum, ex trichomatibus flagelliformibus turgidis simplicibus centro concreatis compositum*, plant-body (thallus) spherical somewhat hard slippery (slimy) inside not distinctly zoned, made up from filaments whip-

like turgid simple at the centre thickened together; *phycomatis numerosis dense intricatis*, with thalli numerous densely entangled; *phycomate linearis complanata*, with thallus linear flattened.

**phyll-**: in Gk. comp., relating to leaves; *phylocephalus*, with leafy heads.

**Phyllary**: phyllarium (s.n. II); cf. **TEGULUM**.

**Phylloclade**: phyllocladium (s.n. II), abl. sing. **phyllocladio**, nom. pl. **phyllocladia**, abl. pl. **phyllocladii**; **cladodium** (s.n. II), abl. sing. **cladodio**, nom. pl. **cladodia**, abl. pl. **cladodiis**. These terms are preferable to **cladophyllum**.

**Phyllode**: phyllodium (s.n. II).

**Phyllopodium**: phyllopodium (s.n. II).

**Phylum** (s.n. II): leaf. To be distinguished from **phylum** (s.n. II), tribe; *involutri phylla*, involucral bracts.

**-phyllus**: in Gk. comp., -leaved; **macrophyllus**, large-leaved; **microphyllus**, small-leaved; **monophyllus**, one-leaved; **diphyllus**, two-leaved.

**phyamatodeus** (adj. A): warty, verrucose.

**physo-**: in Gk. comp., bladdery; **physocarpus**, with bladder-like fruits.

**phyt-**: in Gk. comp., relating to plants; **photographia**, description or portrayal of plants; **phytologia**, study of plants, botany; **phytopathologia**, study of plant diseases.

**-phyton, -phytum** (s.n. II): in Gk. comp., -plant.

**piceus** (adj. A): black as pitch.

**picro-**: in Gk. comp., bitter; **picrorhizus**, with bitter roots.

**pictus** (part. A): coloured, painted; *see FUCATUS*.

**Piece**: frustum (s.n. II), pars (s.f. III).

**Pigment-spot**: stigma (s.n. III. xi).

**pigmentifer** (adj. A): pigmented. **pigmentivorus** (adj. A): paint-eating, paint-destroying. **pigmentosus** (adj. A): full of pigment, well coloured.

**Pigmentum** (s.n. II): colouring matter, pigment.

**Pile**: cumulus (s.m. II), abl. sing. **cumulo**; *sporis in cumulo*, with spores in a heap.

**pileatus** (adj. A): cap-shaped.

**Pileus**: pileus (s.m. II), abl. sing. **pileo**, *lit.* 'a felt cap'; *mitra* (s.f. I), abl. sing. *mitra*, *lit.* 'turban', is used only for the more or less globose or conical cap of *Morchella* and related *Discomycetes*; *pileus membranaceus profunde umbilicatus flocculosus* 2-3 cm. *latus*, *udus striis seu lituris croceis et alternatim flavis ad marginem radiantibus virgatis*, *siccus unicolor ferrugineus*, pileus (cap) membranous deeply depressed in the middle (umbilicate) finely woolly 2-3

cm. broad, when moist banded with orange yellow and alternate lemon yellow stripes or smears to the margin radiating, when dry uniformly rust-coloured; *pileus horizontalis suborbicularis laccatus*, *primitus e strato poroso albo tenuissimo constans, sensim dilatatus*, *primum planus aut modice convexus, fuligineus, opacus, zonis concentricis paucis obscurioribus notatus, margine patente tandem deflexo*, pileus horizontal almost circular apparently varnished, at the very first from a layer porous white very thin composed, gradually enlarged, at first flat or moderately convex, sooty, dull, with zones concentric few rather obscure marked, with margin spreading finally deflexed; *pileo horizontali suborbiculari laccato 3 cm. lato fuligineo zonis concentricis notato*, with pileus horizontal suborbicular apparently varnished 3 cm. broad sooty with concentric zones marked; *pileo albido vel eburneo, dein alutaceo, hygrophano, in statu sicco albo, levi glabro convexo umberato*, with pileus whitish or ivory, afterwards leather-coloured, hygrophanous (watery-looking when wet, opaque when dry), in a dry state white, smooth glabrous convex but umberate (i.e. with a rounded elevation in the centre).

**piller** (adj. A): bearing hairs. **piliformis** (adj. B): hair-like. **Pilositas** (s.f. III):

pilosity, hair-covering. **pilosus** (adj. A): pilose, hairy with distinct long ascending hairs. **Pilus** (s.m. II): hair. 145, 270

**Pinax** (s.m. III): a picture, hence a general survey or representation.

**Pingue** (s.n. III): fat, grease. **pinguis** (adj. B): fat, fatty.

**pink**: roseus (adj. A), erubescens (part. B), persicinus (adj. A), phloginus (adj. A), pudorinus (adj. A), rubellus (adj. A), carneus (adj. A). **pinkish**: subroseus (adj. A).

**Pinna** (s.f. I): primary division of a compound leaf.

**pinnate**: pinnatus (adj. A), less often **pennatus** (adj. A). **pinnately**: pinnatim (adv.). **pinnately cleft**: pinnatifidus (adj. A). **pinnately nerved**: pinnatinervis (adj. B), pinnatinervius (adj. A). **pinnatisept**: pinnatisectus (adj. A). 199, 208

**Pinnule**: pinnula (s.f. I), nom. pl. **pinnulae**; **pinella** (s.f. I), nom. pl. **pinnellae**.

**piriformis**: see PYRIFORMIS.

**Piscina** (s.f. I): fish-pond. **Piscis** (s.m. II): fish.

**pisiformis** (adj. B): pea-shaped. **pisinus** (adj. A): pea-green (H.C.C. 61). **Pisum** (s.n. II): pea.

**Pistil**: pistillum (s.n. II), abl. sing. **pistillo**; gynoecium (s.n. II), abl. sing. **gynoecio**. **pistillate**: pistillatus (adj. A), femineus (adj. A).

**Pit**: **fovea** (s.f. I), abl. sing. **fovea**; **lacuna** (s.f. I), abl. sing. **lacuna**; **folia 3-7 foeverum remotarum calcem seceruentum serie notata**, leaves marked with a series of 3-7 remote pits secreting lime.

**Pitcher**: ascidium (s.n. II), abl. sing. **ascidio**, nom. pl. **ascidia**, abl. pl. **ascidiis**; **ascidia inferiora magna vel parva, parte  $\frac{1}{2}$  inferiore subglobosa, abrupte in partem superiore anguste infundibuliformem transiente alis fimbriatis, persistente in collum 2-3 cm. longum prolongato, sub operculo spinas 2 ferente, applanato ad 10 cm. lato, costis 2 mm. distantibus, operculo reniformi**, lower pitchers large or small, with the lower  $\frac{1}{2}$  part subglobose abruptly passing into the narrowly funnel-shaped upper part, with the wings fimbriate, with the peristome extended into a neck 2-3 cm. long, under the lid bearing 2 spines, flattened, to 10 cm. broad, with ribs 2 mm. apart, with the lid kidney-shaped.

**pitcher-shaped**: urceolatus (adj. A). 73

**Pith**: medulla (s.f. I). **pithy**: medullosus (adj. A). 330

**pitted**: foveatus (adj. A), lacunosus (adj. A). **minutely pitted**: foveolatus (adj. A), scrobiculatus (adj. A). 248, 249

**Place**: locus (s.m. II), nom. pl. loci 'single places', loca 'places connected with one another'; *hoc loco*, at this place; *loco citato*, at the place cited. **placed**: **positus** (part. A), dispositus (part. A), locatus (part. A), collocatus (part. A). **placed among**: interpositus (part. A). **placed upon**: superpositus (part. A).

**Placenta**: placenta (s.f. I), gen. sing. **placentae**, abl. sing. **placenta**, nom. pl. **placentae**, gen. pl. **placentarum**, abl. pl. **placentis**; *ovula 2 ab apice vel sub apice placentae centralis pendula*, ovules 2 from the apex or below the apex of the central placenta pendulous; *ovula in placentis numerosissima*, ovules on the placentas most numerous; *ovula plura placentae centrali liberae sessili vel stipitatae inserta*, ovules many inserted onto the central free sessile or stipitate placenta; *ovarium nunc uniloculare placentis 2 parietibus, nunc biloculare placentis septo adnatis*, ovary now one-chambered with 2 parietal placentas, now two-chambered with placentas joined to the partition; *ovarium placentis valde prominulis in laminas 2 latas revolutas in medio loculo approximatissimas vel continguis divisis*, ovary in loculos 2 vel 4

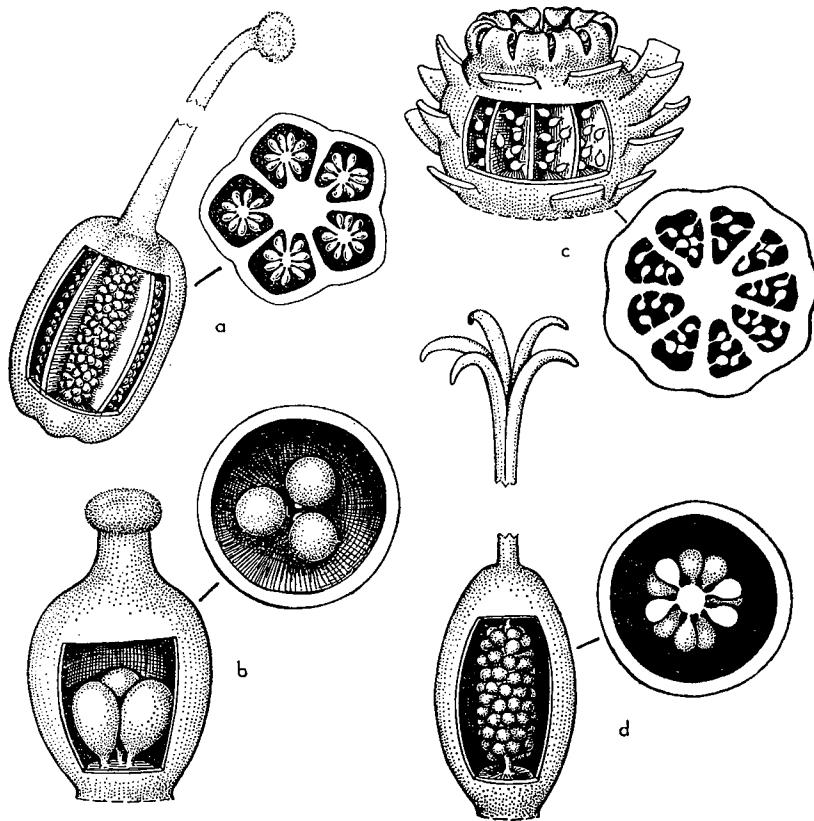


Fig. 36 Types of Placentation

a, ovarium quinqe-loculare, placentatione axiali; b, ovarium uniloculare, placentatione basili; c, ovarium pluri-loculare, placentatione laminari, ovulis disseptimentorum parietibus undique insertis; d, ovarium uniloculare, placentatione centrali libera (drawing by Marion E. Ruff, from G. H. M. Lawrence, *Introduction to Plant Taxonomy*; 1955)

*imperfecte dividentibus*, ovary with strongly prominent placentas divided into 2 broad revolute blades in the middle of the chamber coming together or touching, the ovary into 2 or 4 chambers imperfectly dividing; *styli placentarum numero*, styles with the number of the placentas, i.e. the styles the same in number as the placentas; *stigmata tot quot placentae*, stigmas as many as the placentas. *placenta-bearing*: placentifer (adj. A).

**Placentation**: *placentatio* (s.f. III. vi), *abl. sing.* *placentatione*; *placentatio parietalis*, parietal placentation; *pla-*

*centatio axilis*, axile placentation; *placentatio centralis libera*, free central placentation; *placentatio basalis*, basal placentation; *placentatio laminaris*, lamellate placentation.

*placentiformis* (adj. B); circular and flat, like a flat cake.

*placodioidus* (adj. A), *placidiomorphus* (adj. A): placodioid, with the thallus as in *Placodium*.

*Plaga* (s.f. I): flat surface, region.

*plagio-*: in *Gk. comp.*, oblique; *plagio-neurus*, obliquely nerved.

*Plagula* (s.f. I): fungal colony; *plagulae epiphyllae rarius hypophyllae et caulincola*

*orbiculares velutinae tenues atrae 1-4 mm. diametro saepe confluentes*, colonies growing on upper side of leaves, rarely on the lower side, and on stems orbicular often confluent velvety thin black 1-4 mm. in diameter.

**Plain**: *campus* (s.m. II), *planum* (s.n. II), *planities* (s.f. V). pertaining to plains: *campester*, *campestris* (adj. B).

**plane** (adv.): clearly, distinctly, quite.

**Planities** (s.f. V): flat surface, plain.

*planiusculus* (adj. A): fairly flat.

**Plankton**: *plancton* (s.n. II), *gen. sing.* *plankti*. **planktonic**: *planctonicus* (adj. A).

**plano-compressus** (adj. A): compressed so as to have two opposite flat sides.

**Plant**: *planta* (s.f. I), *gen. sing.* *plantae*, *abl. sing.* *planta*, *nom. pl.* *plantae*, *acc. pl.* *plantas*, *gen. pl.* *plantarum*, *abl. pl.* *plantis*; *plantae annuae vel perennes, terrestres limnobiae vel aquatice*, plants annual or perennial, terrestrial growing on mud or aquatic.

**Plantula** (s.f. I): seedling.

**Planum** (s.n. II): level ground, plain, plane. **planus** (adj. A): even, flat. 32

**Plasmodium**: *plasmodium* (s.n. II), *abl. sing.* *plasmatio*.

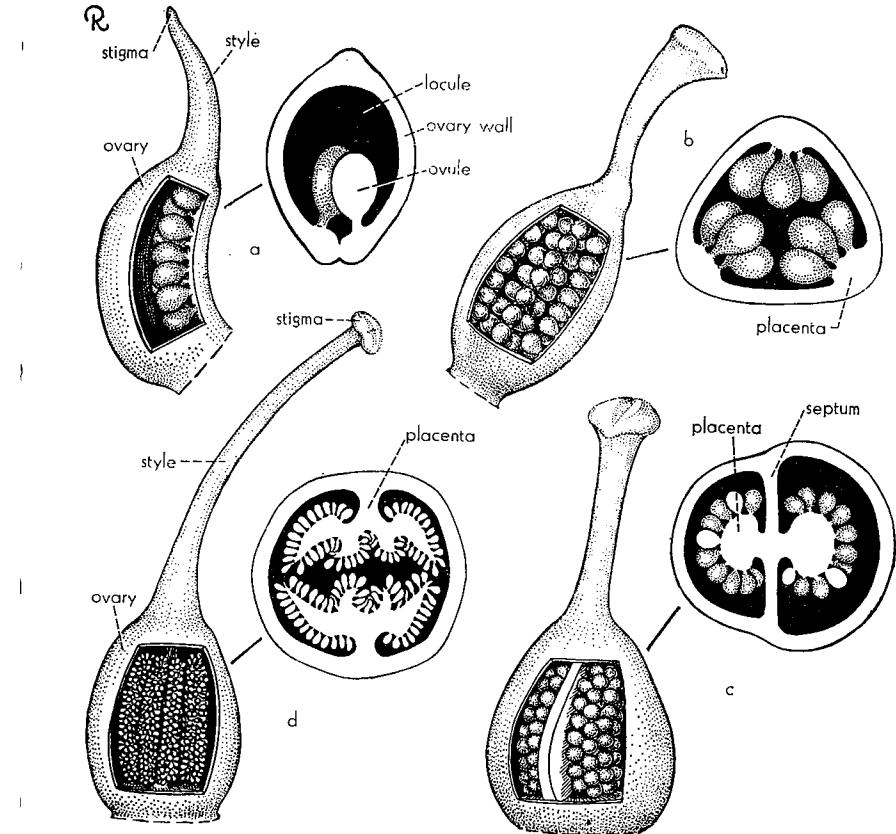


Fig. 37 Types of Placentation

a, ovarium simplex uniloculare, placentatione marginali, ovulis biseriatis; b, ovarium compositum, placentatione parietali; c, ovarium compositum biloculare, placentatione axiali; d, ovarium compositum uniloculare, placentatione parietali, placentis valde intrusis (drawing by Marion E. Ruff, from G. H. M. Lawrence, *Introduction to Plant Taxonomy*; 1955)

**platy-**: in Gk. *comp.*, broad; *platycaulis*, with broad stems; *platylobus*, with broad lobes; *platypetalus*, broad-petaled; *platyphyllus*, broad-leaved.

**pleated**: *plicatus* (adj. A). 372

**pleio-**: in Gk. *comp.*, more than usual; *pleiopetalus*, with more petals, as in a 'double' flower.

**pleisto-**: in Gk. *comp.*, most.

**pleniflorus** (adj. A): with 'double' flowers, the centre of the flower being filled with petals.

**plentiful**: see **ABUNDANT**.

**plenus** (adj. A): full; *flore pleno*, with a 'double' flower.

**pleraque** (adv.), **plerumque** (adv.): for the most part, very frequently.

**Pleuridium**: *pleuridium* (s.n. II).

**pleur-, pleuro-**: in Gk. *comp.*, lateral, in a sideways position, ribbed; *pleurocarpus*, with the fruit lateral; *pleurogenus*, borne laterally; *pleurogenous*; *pleuranthus*, with ribbed flowers.

**Plexus** (s.m. IV): network.

**pliant**: *flexibilis* (adj. B), *lentus* (adj. A). *Plica* (s.f. I): fold. *plicatus* (adj. A): folded into pleats or furrows, usually lengthwise. 372

**piletesialis** (adj. B): *piletesial*, i.e. monocarpic but living for several years. 342

**-ploideus** (adj. A): ending of cytological terms relating to number of sets of chromosomes, derived from Gk. *idios* (private, peculiar, individual), not *eidos* (form), by way of Weismann's term *Id*, introduced in German in 1893 to designate the hereditary germplasm, and Strasburger's terms *Haploid* (single id; gametophyte) and *Diploid* (double id; sporophyte), introduced in German in 1905; cf. *Brittonia*, 4: 338 (1943); *diploideus*, diploid; *hexaploideus*, hexaploid; *tetraploideus*, tetraploid.

**plucked**: *avulsus* (part A).

**Plug**: *obturamentum* (s.n. II).

**plum-coloured**: *prunicolor* (adj. B), *pruninus* (adj. A).

**plumbeus** (adj. A): leaden grey.

**plumosus** (adj. A): feathery.

**Plumule**: *plumula* (s.f. I).

**pluri-**: in L. *comp.*, several-, many-; *pluricostatus*, several-ribbed; *pluriflorus*, several-flowered; *plurifolius*, several-leaved; *plurijugus*, with several pairs of leaflets; *plurilocularis*, several-chambered; *plurinervis*, *plurinervius*, several-nerved.

**pluries** (adv.): often, frequently.

**plurimum** (adv.): very much.

**plurimus** (adj. A): most.

**plus** (adv. *comp.*): more. *plus minusve*, more or less.

**Pluvia** (s.f. I): rain; *tempore pluviarum*, at the time of the rains. *pluvialis* (adj. B), *pluviatilis* (adj. B): relating to rain. **pneumaticus** (adj. A): relating to air, air-filled; *platiphyllus*, broad-leaved.

**Pocket**: *marsupium* (s.n. II). **pocket-like**: *marsupiformis* (adj. B).

**poculiformis** (adj. B): cup-shaped. 83

**pod-, podo-**: in Gk. *comp.*, foot-; *podophyllus*, with a foot-like leaf. The generic name *Podophyllum* is a contraction of *Anapodophyllum*.

**Pod**: (in *Leguminosae*) *legumen* (s.n. III. vi), *abl. sing.* *legumine*, *nom. pl.* *leguminæ*, *abl. pl.* *leguminibus*; (in *Cruciferae*) *siliqua* (s.f. I), *abl. sing.* *siliqua*, *nom. pl.* *siliquæ*, *abl. pl.* *siliquis*.

**Podetium**: *podetium* (s.n. II). **-podus** (adj. A): in Gk. *comp.*, -footed, -based.

**poecil-, poecilo-**: in Gk. *comp.*, many-coloured, spotted, variegated, dappled, of various colours. Sometimes uncommendably transliterated as *poikil-*; *poecilanthes*, with speckled or variegated flowers; *poecilodermus*, with mottled skin.

**Pogon** (s.m. III): in Gk. *comp.*, beard; *pogonanthus*, with bearded flowers; *pogonochelius*, *pogonochilus*, with bearded lip; *pogonopilus*, with bearded plume; *pogonostemon*, with bearded stamen.

**Point**: *punctum* (s.n. II) 'dot', *acumen* (s.n. III) 'sharp end'. **pointed**: *acus* (adj. A). **pointless**: *muticus* (adj. A).

**poisonous**: *venenatus* (part. A), *venenosus* (adj. A), *toxicarius* (adj. A), *virosus* (adj. A).

**polar**: *polaris* (adj. B).

**polarilocular**: *polarilocularis* (adj. B).

**Pole**: *polus* (s.m. II); *cellulae polis rotundatis*, cells with rounded poles; *ad polos*, at the poles.

**polished**: *politus* (part. A), *nitidus* (adj. A), *laevigatus* (adj. A), *levigatus* (adj. A), *rasilis* (adj. B). 296

**politus** (part. A): polished.

**Pollen**: *pollen* (s.n. III. v), *gen. sing.* *pollinis*, *abl. sing.* *polline*; *antherae violaceae pollen dilute luteum valde irregulare continentis*, anthers violet containing light yellow very irregular pollen; *antherae polline omnino fertili*, anthers with pollen completely fertile; *polline pro parte majore sterili*, with pollen for the greater part sterile.

**Pollen-grain**: *pollinis granum* (s.n. II); *pollinis granulum* (s.n. II). For terminology see Wodehouse, *Pollen Grains* (1935), Faegri & Iversen, *Textbook of Pollen Analysis* (1964), Erdman, *Pollen Morphology* (1952), and Kremp, *Morphologic Encyclopedia of Palynology* (1965). Among the many terms are

**annulus** (s.m. II), **aperture** (apertura); *s.f. I*, *colpus* (s.m. II), *dyad* (dyas); *s.n. III*, *equator* (aequator); *s.m. III. v*, *exine* (exinium); *s.n. II*, *exitus* (s.m. IV), *face* (facies); *s.f. V*, *foramen* (s.n. III. vi), *lumen* (s.n. III. vi), *mesocolpium* (s.n. II), *murus* (s.m. II), *polar area* (area polaris); *s.f. I*, *adj. B*, *pole* (polus); *s.m. II*, *pore* (porus); *s.m. II*, *reticulum* (s.n. II), *rupa* (s.f. I), *spine* (spina); *s.f. I*, *stria* (s.f. I), *sulcus* (s.m. II), *tetrad* (tetradium); *s.n. II*, *ulcus* (s.m. II), *valla* (s.f. I), *verruca* (s.f. I).

In taxonomic descriptions of Acanthaceae authors sometimes use the German terms 'Faltenpollen', 'Rippenpollen', etc., proposed by Radkofer and Lindau, notably in Engler, *Bot. Jahrb.*, 18: 36 (1893), Engler & Prantl, *Pflanzenfam.* IV, 3b: 280 (1895), Urban, *Symb. Antill.*, 2: 173 (1900); *pollinis grana parva* (25-35  $\mu$ ) *tripora utroque latere pororum serie singula scutellorum magnorum ornata*, pollen grains small (25-35  $\mu$ ) 3-pored on each side of the pores with a single row of large shields ornamented; *grana virgata*, *virgis septatis tortis*, grains banded, with bands septate twisted; *grana globosa leviter reticulata echinulata*, *spinulus intra reticuli spatio in circulos dispositis*, grains globose lightly reticulate somewhat spiny, the little spines inside the spaces of the network in circles arranged; *pollinis granula e typo 'Stachelpollen'*, pollen grain from the type 'Stachelpollen' (spine-pollen); *pollinis granula c. 60  $\mu$  diametro sphaeroidea ad typum 'Wabenpollen' nominatum pertinent*, pollen grains about 60  $\mu$  in diameter to the type named 'Wabenpollen' (honeycomb-pollen) belonging; *grana poris 3 aequatorialibus exino punctato*, grains with 3 equatorial pores, the exine punctuate; cf. *HORREOLUM*.

**Pollex** (s.m. III. i): thumb, length of first joint of thumb, 1 inch, approx. 2.5 cm.; same as *UNCIA*, q.v. *pollicaris* (adj. B): 1 inch long.

**pollinarius** (adj. B), *pollinicus* (adj. A): pertaining to pollen. *pollinifer* (adj. A): pollen-bearing.

**Pollinium**: *pollinium* (s.n. II), *abl. sing.* *pollinio*, *nom. pl.* *pollinia*, *abl. pl.* *polliniis*; *pollen in massas 'pollinia' dictas in quoque loculo solitarias conglutinatum*, pollen in masses called 'pollinia' in each loculus solitary joined together; *pollinia globosa oblonga vel pyriformia vel apice basive in acumen breve vel caudiculam longam producta*, *pollinia* globose oblong or pear-shaped

or at apex or base into a short point or long caudicle drawn out.

**polluted**: *contaminatus* (part. A), *pollutus* (part. A); see *INQUINATUS*.

**poly-**: in Gk. *comp.*, many, numerous; *polyanthus*, many-flowered; *polyarthrus*, many-jointed; *polybotrys*, with many racemes; *polycarpus*, with many fruits; *polycladus*, with many shoots; *polychromus*, many-coloured; *polyedricus*, with many flat sides; *polyembryonalis*, with many embryos; *polyneurus*, many-nerved; *polyphlebius*, many-veined; *polyphyllus*, many-leaved; *polypleurus*, many-ribbed; *polypterus*, many-winged; *polyyrhizus*, with many roots; *polyschistus*, split into many parts; *polyspermus*, with many seeds.

**polyadelphus** (adj. A): having stamens in several groups, each group formed by the union of filaments.

**polyarthrodactylus** (adj. A): having the ultimate rays or dactyls of Charophyta each composed of more than two cells.

**polycarpic** (adj. A): *polycarpic*, i.e. having the power to bear fruit many times, not dying after fruiting but once. 342

**polygamus** (adj. A): polygamous, i.e. having both unisexual and bisexual flowers on the same individual or on different individuals of the same species.

**polygynus** (adj. A): with many pistils or styles.

**polymorphus** (adj. A): very variable in form.

**polypetalous** (adj. A): having petals all distinct and free from one another.

**polyphagus** (adj. A): occurring on a diversity of host plants.

**polystichus** (adj. A): in many ranks, rows or series.

**pomaceo-viridis** (adj. B): apple-green.

**Pome**: *pomum* (s.n. II), *abl. sing.* *pomo*.

**pomeridianus** (adj. A): opening in the afternoon.

**Pond, Pool**: *stagnum* (s.n. II), *lacuna* (s.f. I); cf. *PISCINA*.

**ponderous** (adj. A): weighty, heavy.

**Ponticulus** (s.m. II): a small bridge.

**poorly**: *infirmus* (adj.), *debiliter* (adv.).

**porandrus** (adj. A): with anthers opening by pores.

**poratim** (adv.): by pores.

**porcatus** (adj. A): ridged.

**Pore**: *porus* (s.m. II), *abl. sing.* *poro*, *nom. pl.* *pori*, *abl. pl.* *poris*; *spirantrum* (s.n. II), *abl. sing.* *spirantrum*, *nom. pl.* *spirantrum*, *abl. pl.* *spirantris*; *pori inaequales ampli citrini angulati cum tubulis concolores*, pores uneven large lemon-yellow angled the same colour

as the tubules; *pori simplices minuti subrotundi*, pores simple minute almost round; *poris abis magnis concentricis dispositis*, with pores white large concentrically arranged; *poris primo pallidis demum cum pileo concoloribus minimis angulatis (penta-hexagonis) intus nudis*, with pores at first pale at length the same colour as the pileus most small angled (5-6 angled) naked inside; *antherae poris terminalibus rotundatis vel elongatis dehiscentes*, anthers dehiscing by pores terminal rounded or elongated.  
**porous** (adj. A): pierced with small holes.  
**porphyr-**, **porphyro-**: in Gk. comp., purple; *porphyranthus*, *porphyrantherus*, purple-anthered; *porphyranthus*, purple-flowered; *porphyrocalyx*, with purple calyx; *porphyroneurus*, purple-nerved; *porphyrophyllus*, purple-leaved; *porphyrotaenia*, purple-banded. *porphyreus* (adj. A): purple.  
**porraceus** (adj. A): leek-green; see *PRASINUS*.  
**orrectus** (part. A): stretched outwards and forward; cf. *TEXTURA*.  
**portatus** (part. A): carried.  
**Porus** (s.m. II): pore, q.v.  
**Positio** (s.f. III. vi): position, situation.  
**positus** (part. A): placed.  
**possibly**: forte (adv.) 'by chance', fortasse (adv.) 'perhaps'.  
**post** (adv.): (of place) behind, back; (of time) after, afterwards. **post** (prep. with acc.): (of place) behind; (of time) after, since; *post anthesin*, after anthesis.  
**postea** (adv.): after that, thereafter, afterwards, later.  
**posterior** (adj. compar.): following after, later.  
**posterior**: *posticus* (adj. A). **posteriorly**: *postice* (adv.).  
**posteriorius** (adv.): later, afterwards.  
**posthaec** (adv.): afterwards, after this.  
**postice** (adv.): at the back, rearwards.  
**posticus** (adj. A): that which is behind, at the back, posterior; (of anthers) extrorse, facing outward and away from the axis of the flower; (of corolla) nearest the axis; (of Hepaticae) on the lower or ventral (rooting) side; *calycis lobus posticus acutus*, of the calyx the posterior lobe acute; *limbus bilabiatus, lobo postico brevi emarginato vel bifido, lobis lateribus brevibus, antico ceteris longiore*, limb 2-lipped, with the posterior lobe short emarginate or bifid, the lateral lobes short, the anterior one longer than the others. 421  
**postremo** (adv.); at last, finally; *calyx sub anthesi 5 mm. postremo 8 mm. longus*, calyx at flowering time 5 mm. ultimately

8 mm. long, cf. *DEMUM. postremus* (adj. A): hindmost, last.  
**potamophilus** (adj. A): river-loving.  
**Potassium**: *kalium* (s.m. II), *gen. sing. kali*; *potassium* (s.m. II), *gen. sing. potassii*.  
**potest** (3rd sing. pres. indic. of verb *possum*): 'it is possible'.  
**potius** (adv.): rather, preferably.  
**pot-shaped**: *olliformis* (adj. B).  
**Pouch**: *saccus* (s.m. II), *abl. sing. sacco*; *sacculus* (s.m. II), *abl. sing. sacculo*; *marsupium* (s.m. II), *abl. sing. marsupio*.  
**pouched**: *saccatus* (adj. A); *marsupiatus* (adj. A). **pouch-shaped**: *marsupiformis* (adj. B), *scrotiformis* (adj. B). 84  
**Powder**: *pulvis* (s.m. III. v), *abl. sing. pulvere*; *farina* (s.f. I), *abl. sing. farina*.  
**powdered**: *pulveratus* (part. A), *pulverulentus* (adj. A), *farinosus* (adj. A).  
**powdery**: *pulveraceus* (adj. A), *pulvereus* (adj. A). 306  
**praehens** (part. B): holding forth, offering, making, exhibiting (used with acc.).  
**praecedens** (part. B): preceding.  
**praecipitatus** (part. A): cast down, precipitated.  
**praecipue** (adv.): chiefly, especially, mainly.  
**praeclaire** (adv.): very clearly, admirably, very well.  
**praeclusus** (part. A): closed, shut.  
**praecox** (adj. B): precocious, developing early, over-hasty, bearing flowers before the leaves; cf. *HYSTERANTHUS*, *PRIMIGENUS*.  
**praeditus** (part. A): provided with, possessed of.  
**Praefloratio** (s.f. III. vi): aestivation, q.v.  
**Praefoliatio** (s.f. III. vi): vernation.  
**praegnans** (adj. B): pregnant, swollen, swollen with, full of (with abl.); *herba succo praegnans*, herb full of juice.  
**praemorsus** (adj. A): premorse, as if bitten off. 159  
**Praerupta** (s.n. pl. II): steep or rugged places, cliffs.  
**Praesentia** (s.f. I): presence.  
**praesertim** (adv.): chiefly, especially.  
**praeter** (adv. and prep. with acc.): beyond, besides, except for.  
**praeteritus** (part. A): past and gone, past; *rosulae anni praeteriti*, rosettes of the past year; cf. *ANNOTINUS*.  
**praetermissus** (part. A): left out, omitted, overlooked, neglected.  
**praetextus** (part. A): bordered, fringed.  
**prasius** (adj. A): leek-green; see *PORRACEUS*.  
**pratensis** (adj. B): growing in meadows.  
**Pratum** (s.n. II): meadow; *in pratis*, in meadows.

**preceding**: *praecedens* (part. B), *antecedens* (part. B).  
**precipitated**: *praecipitatus* (part. A).  
**precisely**: *adamassum* (adv.), accurate (adv.), definite (adv.); cf. EXACTLY.  
**pregnant**: *praegnans* (adj. B).  
**prehendens** (part. B), *prehensilis* (adj. B): grasping, taking hold of.  
**premens** (part. B): pressing.  
**premorse**: *praemorsus* (adj. A).  
**presence**: *praesentia* (s.f. I); cf. ABSENCE, present (adj.): *praesens* (adj. B) 'at hand, in sight', *suppetens* (part. B) 'at hand, in store'; *folia praesentia*, leaves present; *semina in speciminibus suppetentibus immatura*, seeds in available specimens immature.  
**present time**, at (adv.): *nunc* (adv.) 'now', *hodie* (adv.) 'today', *praesenti tempore* 'at the present time', *jam* (adv.) 'at this time'.  
**present, to be** (verb): *adsum*; *summitas caulis tantum adest*, the top of the stem only is present; *caules (qui adsum) 5 mm. crassi*, the stems (which are present) 5 mm. thick; *plantae unisexuales frequenter adsunt*, unisexual plants frequently present; cf. *DEEST*, *SUPPETO*.  
**presenting**: *efficiens* (part. B), *praebens* (part. B), *ostendens* (part. B).  
**preserved**: *conservatus* (part. A), *asservatus* (part. A), *servatus* (part. A).  
**pressing upon**: *premens* (part. B).  
**Pressio** (s.f. III. vi): pressure, a pressing down.  
**previously**: see FORMERLY.  
**Prickle**: *aculeus* (s.m. II), *nom. pl. aculei*, *abl. pl. aculeis*; *aculei inaequales sparsi validi*, prickles unequal sparse stout; *caulis aculeis multis inaequalibus rectis vel curvatis*, stem with prickles many unequal straight or curved. *brickly*: *aculeatus* (adj. A). 261  
**pridem** (adv.): long ago, formerly.  
**primaevus** (adj. A): in the first period of life, youthful.  
**primarius** (adj. A): of the first rank, chief.  
**primigenus** (adj. A): first produced.  
**Primitiae** (s.f. I, pl.): first things, first fruits, beginnings; *primitiae florae amurensis*, beginnings of an Amur flora.  
**primitivus** (adj. A): primitive, the first or earliest of its kind; cf. *PRISTINUS*.  
**primitus** (adv.): at first, for the first time.  
**primo** (adv.): at first, at the beginning.  
**Primocane**: *primocanna* (s.f. I), *abl. sing. primocanna*, *nom. pl. primocannae*, *abl. pl. primocannis*; *primocannae aestate arcuatae autumno apice decumbentes ad 2 m. longae 1-5 cm. crassae teretes aculeis multis curvatis armatae*,

directions terminating; *valvae ellipticae processibus conspicuis basi inflatis opposite inclinatis truncatis vel rotundatis, spatio inter bases processuum convexo*, valves elliptic with processes conspicuous at base inflated oppositely inclined truncate or rounded, with the space between bases of processes convex; *peristomium internum e processibus subulatis superne papillosis irregularibus compositum*, inner peristome made from processes subulate above papillose irregular.

**procreans** (part. B): bringing forth, producing.

**procui** (adv.): at a distance, far, far from, unconnected with.

**procumbent**: procumbens (part. B), humifusus (adj. A), prostratus (part. A). 422

**procurrens** (part. B): extending, jutting out, projecting.

**prodiens** (part. B): coming forth, springing from, appearing, produced; *fructus solitarius e folii axilla prodiens*, fruit solitary from the axil of leaf coming forth.

**Prodromus** (s.m. II): forerunner, preliminary work which should be followed by a more complete one.

**producing**: efferens (part. B), procreans (part. B), producens (part. B), faciens (part. B), pariens (part. B).

**productus** (part. A): extended, elongated, stretched, brought forward; *see PROLONGATUS*.

**Professor** (s.m. III. v): 'one who makes instruction in any branch a business (post-Aug.)' (Lewis & Short); *botanices professor*, professor of botany.

**profluens** (part. B): flowing; *aqua profluens*, running water.

**profunde** (adv.): deeply. **Profunditas** (s.f. III): great depth. **profundus** (adj. A): deep.

**profuse** (adv.): lavishly, profusely. **profusus** (part. A): spread out, extended, profuse.

**Progeny**: progenies (s.f. V), proles (s.f. III).

**progrediens** (part. B): advancing by growth and dying off behind.

**projecting**: procurrens (part. B), projectus (part. A), extans (part. B), eminens (part. B). **Projection**: projectura (s.f. I), prominentia (s.f. I).

**prolabens** (part. B): gliding or slipping forward.

**prolatus** (part. A): lengthened, extended, enlarged, drawn out towards the poles, prolate (describing pollen).

**Proles** (s.f. III. ii): progeny, race, group of closely related taxa.

**prolifer** (adj. A), **prolificans** (adj. B), **pro-**

**lificus** (adj. A): producing offsets, bearing progeny as offshoots.

**Prolificatio** (s.f. III. vi): prolification.

**prolongatus** (part. A): lengthened, extended; *see PRODUCTUS, PROTENTUS*.

**Prolusio** (s.f. III. vi): prelude, preliminary way; cf. PRODROMUS.

**prominent** (part. B): prominent, standing or jutting out. **Prominentia** (s.f. I): projection.

**prominently**: manifeste (adv.).

**prominulus** (adj. A): slightly raised, standing out a little.

**promiscue** (adv.): promiscuously, indiscriminately. **promiscuus** (adj. A): mixed, indiscriminate, promiscuous.

**Promontorium** (s.n. II): promontory, headland; *Promontorium Bonae Spei*, Cape of Good Hope.

**promptus** (part. A): apparent, manifest, at hand, ready.

**Prong**: dens (s.m. III. x); cf. TRIBULLIFORMIS, TRINACRIFORMIS.

**pronus** (adj. A): leaning forward, inclined downward, prostrate. 423

**Propagatio** (s.f. III. vi): propagation (usually asexual); *propagatio vegetativa in statu erratico, haud in statu sedentario* vegetative propagation in the mobile state, not in the stationary state; *propagatione asexuali per divisionem cellularum in membrana maternali*, with asexual propagation by means of division of cells within the maternal membrane.

**Propago** (s.f. III): layer; cf. CUTTING.

**Propagulum** (s.n. II): offset.

**Protapulum** (s.n. II): an open or uncovered place, stomatal aperture.

**prope** (adv. and prep. with acc.): near.

**propemodo** (adv.): nearly, almost.

**Property**: proprietas (s.f. III), q.v.

**Prophyll**: prophyllum (s.n. II).

**propinquus** (adj. A): near, neighbouring.

**Proportion**: *proprio* (s.f. III. vi), *abl. sing. proportione*; *differ staminum cum perigonio proportione diversa*, it differs by the different comparative relation of the stamens to the perigon. **proportionally**: proportione (adv.).

**propositus** (part. A): proposed, displayed.

**propre** (adv.): specially, for oneself, properly, characteristically. **proprius** (adv. A): one's own, special, particular, characteristic; *sectio flore saepius 4-mero pro genere proprio saepe sumitur*, the section with flower most often tetramerous as a genus on its own is often taken; *genus ovario uniloculari seminibus multis insigniter proprium*, genus by the unilocular ovary with many seeds specially characterized.

**Proprietas** (s.f. III): special property, feature, peculiarity; cf. CHARACTER, QUALITAS.

**propter** (adv. and prep. with acc.): near, on account of, because of.

**propullans** (adj. B): putting out, budding, shooting forth.

**propulsus** (part. A): driven forward.

**prorsus** (adv.): forwards, directly. **prorsus** (adv.): certainly, exactly, precisely.

**prorsus** (adj. A): straightforward, direct.

**prorumpens** (part. B): breaking forth, bursting through.

**Prosenchyma** (s.n. III. xi): prosenchyma (tissue of lengthened cells with tapering ends which overlap and fit together).

**prosenchymatus** (adj. A): prosenchymatous.

**prostrate**: prostratus (part. A), pronus (adj. A); cf. PROCUMBENT. 423

**protentus** (part. A): stretched out, lengthened.

**proter-**: in Gk. comp., first in time.

**proterandrus** (adj. A): protandrous, i.e. with anthers shedding pollen before the stigma of the same flower is mature.

**proteranthus** (adj. A): before the flowers (used of leaves produced before the flowers; cf. HYSTERANTHUS, SYNANTHUS).

**proterogynus** (adj. A): protogynous, i.e. with the stigma pollen-receptive before the anthers of the same flower are mature.

**Prothallus**: prothallus (s.m. II), *abl. sing. prothallo*.

**protinus** (adv.): (of position) forwards, (of time) forthwith, from the very first.

**proto-**: in Gk. comp., first, original, chief.

**Protonema**: protonema (s.n. III. xi), *abl. sing. protonemate*.

**Protoplasm**: protoplasma (s.n. III. xi), *abl. sing. protoplasmate*; *protoplasma uniformiter granulosum*, protoplasm uniformly granular. **protoplasmic**: protoplasmic (adj. A).

**Protoplasm**: protoplastus (s.m. II), *abl. sing. protoplasto, nom. pl. protoplasti, abl. pl. protoplastis*.

**protractus** (part. A): drawn out, lengthened.

**protrudens** (part. B), **protrusus** (part. A): pushed out, exserted.

**protuberans** (part. B): bulging, swollen.

**Protuberatio** (s.f. III): bulge, swelling.

**provectus** (part. A): advanced, carried forward, extended.

**proveniens** (part. B): coming forth, coming from.

**provided with**: instructus (part. A) 'furnished', munitus (part. A) 'fortified', indutus (part. A) 'clothed', vestitus (part. A) 'clothed', refertus (part. A)

'well-supplied', paratus (part. A) 'prepared', praeditus (part. A) 'endowed', obsitus (part. A) 'sowed with, covered over', onustus (adj. A) 'laden, burdened, full', gaudens (part. B) 'rejoicing in', armatus (part. A), 'armed', ornatus (part. A) 'splendidly furnished'.

**Province**: provincia (s.f. I): *provincialis*, pertaining to Provence, southern France.

**provisional**: provisorius (adj. A): *nomen provisorium*, provisional name.

**proximalis** (adj. B): proximal, nearest to the axis.

**proxime** (adv.): very near, nearest, next, very closely. **proximus** (adj. A): nearest, next.

**Pruina** (s.f. I): waxy whitish powdery 'bloom' or secretion on surface of some plants. **pruinatus** (adj. A), **pruinosus** (adj. A): pruinose, covered with a pruina. 305

**prunicolor** (adj. B), **pruninus** (adj. A): plum-coloured, purple.

**pruriens** (part. B): causing itching, stinging.

**psammo-**: in Gk. comp., sand-; *psammonphilus*, sand-loving.

**pseud-**, **pseudo-**: in Gk. comp., false-, i.e. resembling but not equalising. Frequently and sometimes ridiculously used as a prefix in epithets to indicate a close resemblance leading to confusion; among the worst of such compounds are *pseudonebrownii*, not, however, intended as an insult to N. E. Brown, and *pseudonanacampophyllus*.

**Pseudobulb**: pseudobulbus (s.m. II); cf. BULB.

**Pseudocilium**: pseudocilium (s.n. II).

**Pseudocypophylla**: pseudocypophylla (s.f. I).

**Pseudoelater**: pseudoelater (s.m. III. v).

**pseudolateralis** (adj. B): morphologically terminal but appearing lateral.

**Pseudoperianth**: pseudoperianthium (s.n. II).

**Pseudopodium**: pseudopodium (s.n. II); *pseudopodia simplicia e variis locis corporis sed praecipue postice extendentia*, pseudopodia simple from various places of the body but especially at the rear stretching out.

**Pseudoraphe**: pseudoraphe (s.f. III), pseudoraphe (s.f. III), costa (s.f. I) longitudinalis; cf. RAPHE.

**Pseudoseptum**: pseudoseptum (s.n. II).

**psil-, psilo-**: in Gk. comp., bare, bald, smooth; *psilanthus*, with glabrous flowers; *psilocarpus*, with smooth or glabrous fruits; *psilocladius*, with smooth or glabrous shoots.

**psittacinus** (adj. A): parrot-like, i.e. with green or contrasting colours.

pter-, pterygo-: in *Gk. comp.*, wing-, winged; *pterospermus*, *pterygospermus*, with winged seeds. -pterus (adj. A): in *Gk. comp.*, winged; *tetropterus*, four-winged. 60

ptycho-: in *Gk. comp.*, referring to folds, pleats, clefts or deep grooves; *ptycho-calyx*, with pleated calyx.

pubens (adj. B): downy. *puberulus* (adj. A): minutely pubescent, downy with very short soft hairs. *Pubes* (s.f. III. viii): pubescence, hairiness. *pubescens* (part. B): hairy as opposed to glabrous, downy with short soft hairs. *Pubescens* (s.f. I): pubescence, hairiness. *pubi-*: in *L. comp.*, softly or weakly hairy; *pubinervis*, *pubinervius*, with pubescent nerves. 271

Publication: *liber* (s.m. II) 'book, treatise', *libellus* (s.m. II) 'pamphlet'. Statement of the issue of a publication is illustrated by the following: *fasciculus primus hujus voluminis publici juris factus est mense Octobri 1811, secundus mense Decembri ejusdem anni, tertius et quartus Martio 1812, quintus et sextus Novembri 1813, septimus et octavus Februario 1815; nonus et decimus tandem nunc prodeunt* (J. F. Jacquin, *Ecl. Pl.*), the first fascicle of this volume was made available for public judgment in the month of October 1811, the second in December of the same year, the third and fourth in March 1812, the fifth and sixth in November 1813, the seventh and eighth in February 1815; the ninth and tenth at last now come forth; in *lucem prodiere Fasc. I die 15 m. Septembri 1903, Fasc. II die 18 m. Februario 1904*, into the public view were brought forth *Fasc. I* on the 15th day of the month September 1903, *Fasc. 2* on the 18th day of February 1904; *opus rarissimum nunquam in bibliopolis venale, quidem sexaginta exemplaribus divulgatum est*, a most rare work, at no time in bookshops for sale, however in sixty copies it was published; *pars prima sistens p. I ad 434 edita fuit mense Julio 1862*, the first part presenting p. 1 to p. 434 has been published in the month of July 1862; *pars secunda editur mense Aprili 1883*, the second part is being published in the month of April 1883.

published: *divulgatus* (part. A), *evulgatus* (part. A).

*Pugillus* (s.m. II): a handful; *novarum stirpium pugillus*, of new plants a handful; cf. *SERTUM*.

*pugioniformis* (adj. B): dagger-shaped.

*pulchellus* (adj. A): beautiful and little.

*pulcher* (adj. A): beautiful. *pulchre* (adv.): beautifully, excellently.

*pullatus* (adj. A): clothed in black, i.e. dark brown.

pulled off: *avulsus* (part. A).

*pullans* (part. B): budding off, sprouting.

*pullus* (adj. A): very dark, blackish.

*Pulpa* (s.f. I): pulp, flesh of fruit; cf. *CARO*.

*pulposus* (adj. A): fleshy, pulpy.

*pulveraceus* (adj. A), *pulvereus* (adj. A): powdery, powder- or dust-like.

*pulveratus* (part. A), *pulverulentus* (adj. A): powdered, dusty, covered with powder; cf. *FARINOSUS*, *PULVIS*. 306

*Pulvillum* (s.n. II): hot-bed.

*pulvinatus* (adj. A): cushion-shaped, strongly convex. *pulviniformis* (adj. B): cushion-shaped.

*Pulvinulus* (s.m. II): excrescence on lichen-thallus.

*Pulvinus* (s.m. II): swollen base of petiole, cushion; *thallus pulvinum formans*, thallus forming a cushion.

*Pulvis* (s.m. III. v): powder; *folium pulvere flavo conspersum*, leaves with yellow powder sprinkled.

*Pumilio* (s.m. and f. III. vi): a dwarf, pygmy. *pumilus* (adj. A): dwarf, close-growing, short. 335

*punctatus* (adj. A): dotted, marked with dots, spots, minute glands, etc. *puncticulatus* (adj. A), *puncticulosis* (adj. A): minutely or finely dotted. *punctiformis* (adj. B): dot-like, reduced to a mere point. *Punctatio* (s.f. III. vi): dotting. *punctulatus* (adj. A): minutely dotted. *Punctulum* (s.n. II): a minute dot. *Punctum* (s.n. II): point, position, dot, small spot. 258

*pungens* (part. B): piercing, pungent, terminating in a hard sharp point. 143

*puniceus* (adj. A): phoenician purple, crimson.

*pure*: *purus* (adj. A); (as colour term, also) *vividus* (adj. A), *laetus* (adj. A).

*purple*: in *L. comp.*, *purpureo-*, in *Gk. comp.*, *porphyr-*, *porphyro-*.

*purpuratus* (adj. A): dressed in purple, empurpled. *purpurascens* (part. B): purplish, becoming purple. *purpureus* (adj. A): purple, 'dull red with a slight dash of blue' (Lindley). *Purpura* (s.f. I), *Gk. πορφύρα* (s.f.), was originally the name for the shell-fish of the eastern Mediterranean Sea yielding to the Phoenicians, particularly the Tyrians, a liquid for the manufacture of the celebrated purple dye of classical antiquity, later the name of the dye itself. This varied according to the shellfish used and the processing applied, and the epithet *purpureus* came to cover various

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*pulchellus* (adj. A): beautiful and little.

red colours; now it embraces colours between red and violet (H.C.C. 27-34).

*purus* (adj. A): clean, pure, unstained.

*pus* (adj. Gk.): in *Gk. comp.*, -footed; *apus*, gen. sing. *apodis*, footless, sessile.

*pushed down*: *detrusus* (part. A).

*pusillus* (adj. A): very small. 336

*Pustula* (s.f. I): pustule, low projection like a blister or pimple, but larger than a papilla.

*pustulatus* (adj. A): having pustules.

*pustuliformis* (adj. B): blister-shaped.

*put*: see *PLACED*.

*Putamen* (s.n. III. vi): stone or woody endocarp of a drupe; *putamen compressum 1 cm. longum 5 mm. latum 2 mm. crassum laeve*, stone compressed 1 cm. long 5 mm. broad, 2 mm. thick smooth; *putamine subgloboso foveato 1 cm. diametro*, with the stone almost globose pitted 1 cm. in diameter.

*putide* (adv.): disgustingly, badly.

*putrescens* (part. B): rotting. *putridus* (adj. A): rotten.

*putting forth*: *edens* (part B), *emittens* (part B)

*pycn-*, *pycno-*: in *Gk. comp.*, close, dense, compact; *pycanthus*, with flowers crowded together; *pycnostachyus*, with dense spike.

*Pycnidiospore*: *pycnidiospora* (s.f. I).

*Pycnidium*: *pycnidium* (s.n. II).

*Pycniospore*: *pycniospora* (s.f. I).

*Pycnum*: *pycnum* (s.n. II).

*pygmaeus* (adj. A): pygmy, dwarf. 335

*-pyle* (s.f. I): in *Gk. comp.*, -opening.

*pyr-*, *pyro-*: in *Gk. comp.*, fire-, fiery, hence red or yellow.

*pyramidalis* (adj. B): pyramid-shaped.

*Pyrene*: *pyrena* (s.f. I), *abl. sing.* *pyrena*, *nom. pl.* *pyrenae*, *abl. pl.* *pyrenis*; *less used* is *pyren* (s.f. III), *abl. sing.* *pyrene*, *nom. pl.* *pyrenes*, *abl. pl.* *pyrenibus*.

*Pyreoid*: *pyrenoidea* (s.f. III), *abl. sing.* *pyrenoide*, *nom. pl.* *pyrenoidea*, *abl. pl.* *pyrenoibus*.

*pyriformis* (adj. B): pear-shaped, i.e. ovoid or narrowly ovoid with a tapering base. 11

*pyrrh-*, *pyrrho-*: in *Gk. comp.*, fire-red, ruddy, flame-coloured.

*Pythmen* (s.m. III. vi): *pythmen*. *pythmenophorus* (adj. A): *pythmen-bearing*.

*pyxidatus* (adj. A): furnished with a lid, having a pyxidium; see *OPERCULATUS*.

*Pyxidium*: *pyxidium* (s.n. II), *abl. sing.* *pyxidio*.

*Pyxis*: *pyxis* (s.f. III. ii), *abl. sing.* *pyxide*, *nom. pl.* *pyxides*, *abl. pl.* *pyxidibus*.

## Q

*qua* (abl. sing. f. of pron. *qui*): from which; see *QUI*.

*quaqua* (adv.): wheresoever.

*quaquaversum* (adv.): to all sides, in all directions.

*quaque* (abl. sing. f. of pron. *quisque*): each; *foliola* 12-24 in *quaque pinna*, leaflets 12-24 in each pinna.

*quadr-*, *quadri-*: in *L. comp.*, four-; *quadrangularis*, *quadrangulatus*, *quadrangulus*, 4-angled; *quadrialatus*, 4-winged; *quadribracteatus*, 4-bracted; *quadridens*, *quadridentatus*, 4-toothed; *quadrifarius*, in 4 ranks; *quadridus*, 4-cleft, deeply divided into 4 parts; *quadriflorus*, 4-flowered; *quadrifolius*, 4-leaved; *quadrilaterus*, 4-sided; *quadrilobatus*, *quadrilobus*, 4-lobed; *quadrilocularis*, 4-chambered, 4-locular; *quadrinervis*, 4-nerved; *quadriradiatus*, 4-rayed; *quadriavalvis*, 4-valved; *quadrvulnerus*, with 4 red or purple spots like wounds; see *FOUR*, *QUATER*, *TETRA*.

*Quadrans* (s.m. III): quarter, one fourth. *quadrans* (part. B): agreeing. *quadrat*: it agrees.

*quadratin* (adv.): four-fold.

*quadrato-rhombicus* (adj. A): quadrato-rhombic, i.e. square but with a corner at apex and base.

*quadratus* (part. A): squared, square.

*quadri-*: see *QUADR-*. *quadruplo* (adv.): four-fold. *quadruplus* (adj. A): four-fold.

*qua* (pron. f.): which; see *QUI*.

*qualis* (pron. adj.): what kind of?; of what kind, such as, for instance.

*Qualitas* (s.f. III, ii): property, condition.

*quam* (adv.): than, by how much the more, as much as, in what way; *folia 9pl. longiora quam latiora*, leaves 9 times longer than broad (the use of two comparatives, e.g. *longiora* and *latiora* connected by *quam*, is generally considered preferable to a comparative followed by a positive, e.g. *folia 9pl. longiora quam lata*); *lamina foliorum aestivulum magis dilatata quam foliorum autumnalium*, blade of summer leaves more broadened than [the blade] of autumn leaves; *labello latiore quam longiore*, with labelnum longer than broad; *costa magis prominente quam nervis*, with midrib more prominent than the nerves; *foliis plus quam duplo majoribus*, with leaves more than twice as big.

*quamobrem* (prep.): on which account, hence.

*quamquam* (conj.): though, although.

*quamvis* : (adv.) very much; (conj.) although.

*quandoque* (adv.): now and then, sometimes.

*Quantitas* (s.f. III. ii): quantity, extent.

*quantus* (adj. A): how great, as.

*quarciticus* (adj. A): quartz, quartz-like.

quare (adv.): on what account, for which reason.

Quarter: quadrans (s.m. III), *abl. sing.* quadrante; quarta (s.f. I), *abl. sing.* quarta; *in tribus circuli quadrantibus*, on three-quarters of a circle; *in quarta parte inferiore*, on the lower quarter.

quartus (adj. A): fourth.

quasi (adv.): as if, as it were, about, nearly.

quater (adv.): four times. *quaternarius* (adj. A): consisting of four each, containing four. *quaternatim* (adv.): in fours. *quaterni* (num. adj. distr. pl.): four each, four; *sepala quaterna*, sepals four.

quatuor, quatuor (num. adj. indecl.): four.

-que (conj. suffix): and, q.v.

qui (rel. pron.), quae, quod: who, which; commonly used in *abl. sing. f. qua, gen. sing.* cuius or cuius, *abl. pl. quibus*; *species affinis H. indicae a qua floribus minoribus differt*, species akin to H. indica from which by its smaller flowers it differs.

quickly: celeriter (adv.), cito (adv.), prompte (adv.), *spatha cito caduca*, spathe quickly falling off.

quidam (pron. indef.), quaedam, quoddam: a certain (sing.), some (pl.); *quodam tempore*, once (indefinite), *quaedam quaestiones*, some inquiries, some disputed matters.

quidem (adv.): indeed, however, but, at least.

quidpam (adv.): in any respect, somewhat.

quiescens (part. B): resting.

quiet: quietus (adj. A), tranquillus (adj. A): *in aquis quietis*, in still waters.

quin (conj.): or even, truly, indeed; *pedalis quin bipedalis*, a foot or even two feet long.

quinarius (adj. A), quinatus: containing five, consisting of five; *folium quinatum*, leaf with 5 leaflets; *see FIVE, PENTA.*

quincuncialis (adj. B): quincuncial, containing five-twelfths; *aestivatio quincuncialis*, having five parts, of which two have their margins completely outside, two have their margins completely inside and the fifth one has one margin outside and the other inside, as in the calyx of Rosa, whence the medieval Latin riddle of the five brothers: *Quinque sunt fratres, Duo sunt barbati, Sine barba sunt duo nati, Unus ex his quinque Non habet barbam utrinque*, of which there are several renderings, e.g. *Quinque sumus fratres, unus barbatus et alter, Imberbesque duo, sum semibarbis ego*, rendered in English by E. B. Cowell as 'Five brethren of one birth are we, All in a

little family, Two have beards and two have none, And only half a beard has one'. 381

quini (num. adj. distr. pl.): five each, five; *folia quaterna vel sena* (*raro terna vel quina*), leaves 4 or 6 together (rarely 3 or 5).

quinqu-, quinque-, quinqai-; *in L. comp.*, five-; *quinquecostatus*, 5-ribbed; *quinquedentatus*, 5-toothed; *quinquefarius*, 5-rowed; *quinquifidus*, 5-cleft; *quinquefoliatus*, with 5 leaflets; *quinquelobus*, 5-lobed; *quinquelocularis*, 5-chambered; *quinquepartitus*, 5-parted; *quinquevalvis*, 5-valved; *quinquevulnerus*, with 5 red or purple spots or blotches like wounds; *see FIVE, PENTA.* quinque (num. adj. indecl.): five. *quinquiens* (adv.): five times. *quintuplex* (adj. B): five-fold. *quintuplinervis* (adj. B): five-nerved, i.e. with four strong lateral nerves arising from the midrib above its base and running forward towards the tip, as distinct from *quinquenervis*, with all five parting from the same point at the base. *quintus* (adj. A): fifth. 346

quisque (pron.), quaeque, quodque: each, everyone; cf. *QUAQUE, QUOCUE.*

quite: admodum (adv.), omnino (adv.), plane (adv.), sat (adv.), satis (adv.).

quoad (adv.): as to, with respect to; *pro parte quoad plantam typicam*, in part as regards the type plant: *perigonii quoad formam compagem et colorem diversitas*, diversity of the perigon as to shape, structure and colour.

quoque (abl. sing. m. and n. of pron. *quisque*): each; *ovula in quoque loculo duo vel plurima*, ovules in each loculus two or many.

quoquoversus (adv.): everyway, in every direction.

quot (adj. indecl.): as many as, all, every, how many; *quot annis*, every year.

quotidianus (adj. A): every day, daily, common, usual.

quum (conj.): *see CUM* (conj.).

## R

Race: proles (s.f. III).

Raceme: racemus (s.m. II), *acc. sing.* racemum, *abl. sing.* racemo, *nom. pl.* racemi, *acc. pl.* racemos, *abl. pl.* racemis; *racemus elongatus axillaris vel terminalis multiflorus*, raceme elongated axillary or terminal many-flowered. *racemii*: *in L. comp.*, in or with a raceme or raceme-like bunch; *racemifer*, *racemiger*, bearing a raceme; *racemiflorus*, with flowers in a raceme. *racemose*: racemosus (adj. A).

rach-, rhach-: *in Gk. comp.*, pertaining to the main axis, spine or backbone. The

Greek *ράξις* ('spine, backbone, ridge', used by Theophrastus for the midrib of an oak leaf) should properly be transliterated as *rhachis*, but has so commonly been rendered as *rachis* (cf. 'rachitis' and 'rachianaesthesia' in medicine), just as *ῥάφη* ('seam') has produced 'raphe' and *ῥάφις* ('needle') 'raphid', that retention or omission of the *h* is optional in all these, despite its unvarying retention in 'rhizome', 'rheumatism' and 'rhythm'; for this inconsistency there is classical precedent, *ῥάφανος* being latinized as *raphanus* but *ῥάδοδενδρον* as *rhododendron*.

Rachilla: *rhachilla* (s.f. I), *abl. sing.* rhachilla; *rhacheola* (s.f. I), *abl. sing.* rhacheola; both also spelled *rachilla* and *racheola*; *rhachilla tenuis, supra glumas disarticulans*, rachilla thin, above the glumes breaking up; *spiculae rhachilla tenui supra glumas disarticulantes*, spikelets with rachilla thin above the glumes breaking up; *spicularum rhachilla brevissima ultra florem non producta*, of the spikelets the rachilla most short above the flower not extended; *rhachilla inter flores vel sub floribus articulata*, rachilla between the flowers or under the flowers articulated.

Rachis: *rhachis* (s.f. III. ii), *acc. sing.* rhachim or *rhachin*, *gen. sing.* rhachidis, *dat. and abl. sing.* rhachidi, *nom. and acc. pl.* rhachides, *gen. pl.* rhachidum, *dat. and abl. pl.* rhachidibus. This form with a consonant stem in *-d* makes a clear distinction between *nom. sing.* rhachis and *gen. sing.* rhachidis. Alternatively *rhachis* (s.f. III. vii), *acc. sing.* rhachim, *gen. sing.* rhachis, *dat. and abl. sing.* rhachi, *nom. and acc. pl.* rhaches, *gen. pl.* rhachium, *dat. and abl. pl.* rhachibus. In this classically preferable form with an *-i* stem, *nom. sing.* and *gen. sing.* are both *rhachis*. The latter is closer to the transliterated Gk. *nom. sing.* rhachis, *acc. sing.* rhachin, *gen. sing.* rhacheos, *dat. sing.* rhachei. 'rachis' is now mostly used in English, *rhachis* and *rachis* are both well supported in bot. Latin. The term refers to the axis of a leaf above the petiole, i.e. the part bearing leaflets, or to the axis of an inflorescence above the peduncle, i.e. the part bearing flowers or fruits, not to the whole axis, but it has been used for the petiole of a fern frond; *folia paripinnata, rhachidi* (*rhachi*) *breviter pubescente vel subglabra*, leaves pinnate, with the rachis shortly pubescent or almost glabrous; *rhachis straminea, pilis brevibus sed patentibus pubescens, apicem versus bisulcata*, rachis straw-

coloured, with short but spreading hairs pubescent, towards the apex two-grooved; *pili rhachidis* (*rhachis*) *glandulosi*, hairs of the rachis glandular; *rhachidibus* (*rhachibus*) *sparsim paleaceis purpureis supra sulcatis*, with rachides (rachises) sparsely paleaceous purple furrowed above; *foliola opposita ad rhachin usque ad par proximum (inferius) late cuneatim decurrentia, quam ob rem bina cum dilatatione rhacheos limbum obtiangularē formant*, leaflets opposite to the rachis down to the next pair (lower) broadly cuneately decurrent, on which account together with the broadening of the rachis an inverted triangular limb they form.

radial: *radialis* (adj. B).

radians (part. B): radiating, spreading straight outwards from a common centre.

radiiformis (adj. B): having outer florets of the capitulum larger than those of the disc but not ligulate.

radiatim (adv.): in a radiating manner.

radiatus (part. A): radiate, bearing rays or ray-florets, having corollas of outer florets ligulate; *multiradiatus*, many-rayed; *pauciradiatus*, few-rayed. 505

radicalis (adj. B): radical, basal, arising from root or root-stock. 460

radicans (part. B): rooting, putting forth aerial roots. *radicatus* (part. A): having roots.

Radicella (s.f. I): rootlet, q.v. *radicellosus* (adj. A): covered with rootlets.

Radicle: *radicula* (s.f. I).

radicosus (adj. A): with many roots, full of roots, with a large root.

Radicula (s.f. I): radicle, the rudimentary root of the embryo.

radiosus: *see RADIATUS.*

Radius (s.m. II): ray; in Compositae, the outer ligulate florets as distinct from the tubular florets of the disc; in Umbelliferae, the partial umbel; *capitula heterogama radiata, floribus radii uniseriatis neutris, disci hermaphroditis fertilibus, capitula heterogamous radiate*, with flowers of the ray unisexual neuter, of the disc hermaphrodite fertile; *corollae radi ligulatae, disci tubulosae*, corollas of the ray ligulate, of the disc tubular; *see RAY.*

Radix (s.f. III. i): root, q.v.; *ad radices montium* at the foot of mountains; *in radicibus montium Caucasi*, in the lower part of the mountains of the Caucasus.

Radula: *radula* (s.f. I).

radulans (adj. B): rasping, rough as a rasp, scabrous. *radulifer* (adj. A): rasp-bearing.

ragged: *laceratus* (part. A).

**Railway**: *via* (s.f. I) *ferrea*; *secus viam ferream*, along the railway.  
**Rain**: *pluvia* (s.f. I). **rainy**: *pluvialis* (adj. B).  
**raised**: *elevatus* (part. A), *prominens* (part. B).  
**ramealis** (adj. B), *rameus* (adj. A): belonging to a branch. *rameanus* (adj. A): taking the place of a branch, e.g. a thorn or tendril. 462  
**ramentaceus** (adj. A): covered with ramenta. *Ramentum* (s.n. II): a thin membranous or chaffy flattened scale.  
**rameus** (adj. A): *see RAMEALIS*.  
**rami**: in *L. comp.*, pertaining to branches, branched-; *ramicola*, growing on branches; *ramifer*, branch-bearing; *ramiflora*, flowering on older branches; *ramiformis*, shaped like a branch; *ramigenus*, producing branches; *ramisparsus*, spread along the branches; *ramispinus*, with branched spines. *Ramificans* (adj. B): branching. *Ramificatio* (s.f. III. vi): the branching, branch-system, place where a branch arises. *ramosissimus* (adj. A): very much branched. *ramosus* (adj. A): branched, bearing branches (usually many), much-branched. 226, 229  
**ramulinus** (adj. A): belonging to branchlets. *ramulosus* (adj. A): bearing branchlets, usually many. *Ramulus* (s.m. II): branchlet, q.v.  
**Ramunculus** (s.m. II): twig, the ultimate division of a branch.  
**Ramus** (s.m. II): branch; *rami hornotini ascendentibus 3-6 cm. longi glabri*, branches of the present year's growth ascending 3-6 cm. long glabrous; *ramis floriferis ad nodos ramorum validiorum fasciculatis*, with flowering branches at the nodes of the stronger branches clustered; *rami ramulique graciles, inferne cinerascentes, ad apicem in parte hornotini brunei*, branches and branchlets slender, below becoming grey, at the tip in the part of current growth brown; *see BRANCH*.  
**random** (adj.): *fortuitus* (adj. A). at random: *fortuito* (adv.), *temere* (adv.).  
**Range**: *jugum* (s.n. II) 'mountain range', area (s.f. I) *geographica* 'geographical area', *magnitudo* (s.f. III) *variationis* 'size of variation'. **ranging**: *extensus* (part. A) 'spread over', *varians* (part. B) 'varying'.  
**-ranked**: in *L. comp.*, -farius (adj. A), -seriatus (adj. A), -ordinatus (adj. A), in *Gk. comp.*, -stichus (adj. A); *folia bifaria, folia disticha*, leaves in two ranks  
**ranunculinus** (adj. A): resembling a buttercup (Ranunculus), buttercup-yellow (H.C.C. 5).

**Raphe**: *raphe* (s.f. III), *abl. sing.* *raphe*, *nom. pl.* *raphes*, *abl. pl.* *raphibus*, *rarely but more correctly raphae* (cf. RACH-): *ovulum raphe ventrali*, ovule with raphe ventral; *testa raphe longitudinali filiformi*, seedcoat with raphe longitudinal thread-like; *valvae planae raphe recta vel incurva*, valves flat with raphe straight or incurved; *secus raphem*, along the raphe. **Raphe-valve**: *raphovalva* (s.f. I).  
**Raphid**: *rhaps* (s.f. III. ii), *abl. sing.* *raphide*, *nom. pl.* *raphides*, *abl. pl.* *raphidibus*. Commonly used in pl. either as *raphides* or *raphidæ*.  
**rapidly**: *celeriter* (adv.) 'quickly', *abrupte* (adv.) 'abruptly', *prompte* (adv.) 'promptly'  
**rapiformis** (adj. B): turnip-shaped, with a swollen turnip-like root.  
**rare** (adv.): far apart, sparsely. *rarenter* (adv.), *raro* (adv.): seldom, rarely. *rariflorus* (adj. A): with flowers sparse or well separated. *rarior* (adj. compar.): rather rare, more rare, rarer; *plantae novae vel rariores*, plants new or rather rare; *rariorum plantarum historia*, a history of rarer plants.  
**rarissimus** (adj. A): very rare. *rarus* (adj. A): far apart, scattered, rare. 499  
**rasilis** (adj. B): scraped, shaved, smoothed, polished.  
**rasp-like**: *radulans* (adj. B), *radulifer* (adj. A).  
**rather**: *potius* (adv.) 'preferable', *citius* (adv.) 'sooner', *paulo* (adv.) 'a little', *aliquantum* (adv.) 'considerably'; cf. *SOMEWHAT*, *SUB-*.  
**Ratio** (s.f. III. vi): reckoning, calculation, relation, condition; *semina pro ratione magna*, seeds relatively large, i.e. by comparison with those of related plants; *quod rationes longitudinis petalorum*, as to the relations in length of petals.  
**ravidus** (adj. A): greyish.  
**ravus** (adj. A): greyish-yellow, yellowish-grey, tawny.  
**raw** (uncooked): *crudus* (adj. A), *incocitus* (adj. A); *fungus crudus venenatus*, *coccus esculentus*, fungus when raw poisonous, when cooked edible.  
**Ray**: *radius* (s.m. II), *gen. sing.* *radii*, *abl. sing.* *radio*, *nom. pl.* *radii*, *acc. pl.* *radios*, *gen. pl.* *radiorum*, *abl. pl.* *radiis*; *radii ad furcam primam 7-10, quorum 1-3 plerumque simplices, ad furcam secundam 4-7, quorum 0-2 in radiis 4-5 denuo furcati, radiis ultimis bicellularibus, cellula inferiore versus basin cellulae ultimae sensim angustata, cellula ultima parva angusta acuta*, rays at the first fork 7-10, of which 1-3 commonly simple at the second fork 4-7, of which 0-2 into

rays 4-5 once more forked, with ultimate rays 2-celled, with the lower cell towards the base of the end (apical) cell gradually narrowed, the end cell small acute; *radii primarii 7-10, secundarii 4-7, tertiariorum 2-3*, primary rays 7-10, secondary 4-7, tertiary 2-3; *see RADIUS*.  
**reaching**: *attigens* (part. B).  
**ready**: *promptus* (part. A).  
**really**: *revera* (adv.), *vero* (adv.).  
**rear**: *posterior* (adj. comp.), *posticus* (adj. A).  
**recalling**: *admonens* (part. B), *revocans* (part. B), *referens* (part. B).  
**recavus** (adj. A): arched inward, concave.  
**receding**: *recedens* (part. B).  
**recent** (adj. B): *fresh*, *young*, *recent*; in *statu recenti*, in a fresh state (*opp. to in siccō, dried*).  
**Recensio** (s.f. III. vi): enumeration, review.  
**recently**: *nuper* (adv.).  
**Receptacle**: *receptaculum* (s.n. II), *abl. sing.* *receptaculo*: *receptaculum longitudinalis calycis, hemisphaericum vel globosum, 8-10 mm. longum latumque, basi villosum*, receptacle the length of the calyx, hemispherical or globose, 8-10 mm. long and wide, villous at base.  
**recessum** (adv.): backwards.  
**Recessus** (s.m. IV): ebb, retreat, departure; cf. *TIDE*. **recessus** (part. A): receding, reciprocally: *mutuo* (adv.), *mutue* (adv.).  
**reckoned**: *computatus* (part. A).  
**recinatus** (part. A): turned or bent downwards upon some other part; cf. *REPLICATUS*. 378, 403  
**reclusus** (part. A): opened, laid open, unclosed; cf. *APERTUS*.  
**recognitus** (part. A): recognized, authenticated. *recognoscendus* (gerund. A): to be investigated.  
**reconditus** (part. A): closed, hidden, shut up, not easily seen; cf. *OCULTUS*.  
**Rectangle**: *rectangulum* (s.n. II), *figura* (s.f. I) *quadrilatera rectangula*. **rectangular**: *rectangularis* (adj. B), *oblongus* (adj. A).  
**rectangulatus** (adj. A), *rectangulus* (adj. A): right-angled.  
**recte** (adv.): rightly, correctly.  
**recti**: in *L. comp.*, straight, upright; *rectifolius*, with straight (*not curved*) leaves; *rectinervis*, with straight nerves.  
**rectiusculus** (adj. A): fairly straight.  
**rectus** (part. A): straight, upright, 350, 388  
**recurvatus** (part. A), *recurvus* (adj. A): recurved, curved backwards.  
**recutitus** (adj. A): apparently bare of epidermis, skinned.  
**red**: *ruber* (adj. A). This term covers *cinnabarinus*, vermillion (H.C.C. 18),

*scarlatinus*, scarlet (H.C.C. 19), *anguineus*, blood-red (H.C.C. 8.20), *ruber*, *ribis*, currant-red (H.C.C. 8.21), *carmesinus*, crimson (H.C.C. 22), *cerasinus*, cherry-red (H.C.C. 7.22), *cardinalis*, cardinal-red (H.C.C. 8.22), and *ruber rosae*, rose-red (H.C.C. 7.24). The lighter tones of these are often described as *ROSEUS*. Through addition of blue they pass into *purpureus*, of yellow into *aurantiacus*; *caulis ruber*, stem red; *corolla rubra*, corolla red; *folia subtilis rubra*, leaves red beneath; *baccis rubris*, with red berries; *see RUBER*, *RUBINEUS*, etc. *red-*: in *L. comp.*, *rubri-*, *rubro-*, in *Gk. comp.*, *erythro-*, *rhodo-*; *rubro-* *cinctus*, *rubrolimbatus*, *rubromarginatus*, red-margined; *erythrorrhizus*, with red roots; *erythrophyllus*, *rubrifolius*, red-leaved; *erythrostictus*, *rubropunctatus*, red-dotted; *erythroneurus*, *rubronervis*, red-nerved; *rhodo-* used strictly indicates rose-red, *erythro-* any red.  
**redactus** (part. A): reduced, diminished; *folia anisophylla*, *normalia petiolata* *valde obliqua*, *redacta inferiora normalibus similia*, *superiora sessilia basi cordata*, leaves anisophyllous, the normal ones stalked very oblique, the lower reduced ones similar to the normal ones, the upper reduced ones sessile cordate at base.  
**reddish**: *rubescens* (part. B).  
**reddish**: *rubellus* (adj. A), *rubens* (part. B), *rufus* (adj. A).  
**redivivus** (adj. A): reviving from a dry state, living again.  
**redolens** (part. A): diffusing an odour, scented; *see ODORATUS*.  
**reduced**: *deminutus* (part. A), *redactus* (part. A), *reductus* (part. A); *figuræ dimidiæ parte magnitudinis naturalis diminutæ sunt*, the figures are reduced to half natural size.  
**reducens** (adj. A): curved or bent backwards.  
**referens** (part. B): representing, referring to, calling to mind.  
**refertus** (part. A): crammed, filled full; *see FARTCUS*.  
**reflexus** (part. A): reflexed, bent abruptly backwards at more than 90°.  
**Refluxus** (s.m. IV): ebb, back flow; cf. *TIDE*.  
**reformandus** (gerundive of *reformo*): to be reformed; needing revision.  
**refractive**: *refractivus* (adj. A).  
**refractus** (part. A): bent or curved back abruptly and strongly.  
**refringens** (part. B): breaking up, breaking open.  
**Refugium** (s.n. II): refuge.

**Regio** (s.f. III. vi): region, usu. of indefinite extent, tract, province.  
**Region**: *regio* (s.f. III. vi). In morphology it is often best translated by *pars* (s.f. III), 'part'.  
**Regma** (s.n. III. xi): regma, a fruit with elastically dehiscing segments or cocci as in *Euphorbia*.  
**Regnum** (s.n. II): kingdom.  
**regularis** (adj. B): regular, actinomorphic, having all the parts of each series uniform; *flores regulares et symmetrici*, flowers regular and symmetrical. 98  
**regularly**: ordinate (adv.), ordinatum (adv.), regulatim (adv.).  
**rejectus** (part. A): rejected, cast off.  
**rejiciendus** (gerundive of *rejicio*): fit to be cast out, to be rejected; *nomina generica rejicienda*, generic names to be rejected.  
**related**: affinis (adj. B), cognatus (part. A).  
**relatively**: relative (adv.), comparare (adv.), pro ratione.  
**released**: liberatus (part. A).  
**relictus** (part. A): left behind.  
**Reliquiae** (s.f. I. pl.): remains, relics, remnants. **reliquis** (adj. A): remaining, remanens (part. B): remaining behind, staying, abiding, persisting.  
**remarkable**: see NOTABLE.  
**Remnant**: vestigium (s.n. II), reliquiae (s.f. I pl.).  
**remotiusculus** (adj. A): somewhat scattered. **remotus** (adj. A): scattered, remote, not close together; used of gills that do not reach the stem but leave a free space around it; cf. DISTANT, RARUS, SEPARATE. 499  
**removed**: amotus (part. A), demotus (part. A), divulsus (part. A), excussus (part. A), repurgatus (part. A).  
**reniformis** (adj. B): kidney-shaped. 125  
**Renovatio** (s.f. III. vi): renewal shoot.  
**repandus** (adj. A): repand, having a slightly uneven and waved margin. 186  
**repeatedly**: iterum atque iterum (adv.), repetitie (adv.), identidem (adv.).  
**repens** (part. B): creeping, prostrate and rooting; see REPTANS.  
**Repertorium** (s.n. II): repertory. **repertus** (part. A): found, discovered.  
**repletus** (part. A): filled full; cf. FARCTUS, IMPLETUS, REFERTUS.  
**replicatus** (adj. A): turned or folded back upon itself so that the upper and lower parts come together; (in Algae) with annular ingrowth of transverse walls of filaments. 373  
**Replum**: replum (s.n. II), *abl. sing.* replo.  
**representing**: fingens (part. B), referens (part. B).  
**Reproduction**: *reproductio* (s.f. III. vi), *gen. sing.* reproductionis, *abl. sing.*

reproductive: reproductive: reproductive (adj. A); cf. MULTIPLICATION.  
**reptans** (part. B): creeping, prostrate and rooting (see REPTANS); arching and then rooting (see SARMENTOSUS).  
**repullans** (part. B): sprouting again, renewing growth.  
**repurgatus** (part. A): cleaned, cleansed, removed.  
**Res herbaria**: botany; *institutiones rei herbariae*, elements of botany.  
**Research**: investigatio (s.f. III. vi).  
**Resemblance**: similitudo (s.f. III. vi). resembling: similis (adj. B), simulans (part. B), ad instar (n. indecl. with gen.); *fructus forma atque magnitudine fructum Citri aurantiifoliae simulans*, fruit by its shape and size the fruit of *Citrus aurantiifolia* imitating.  
**Residue**: reliquiae (s.f. I. pl.), residuum (s.n. II); *collo in specimibus vetustioribus residuus vaginalium subfibrosis comato*, with the collar (neck) in the older specimens by the almost fibrous remains of the sheath clothed as if with hair; *caudex apice reliquii foliorum emortorum marcidis laceratis brunneis involucratus*, root-stock at the tip with the withered tattered brown remains of dead leaves wrapped.  
**resiliens** (part. B): springing back.  
**Resine**: resina (s.f. I). **resine-producing**: resinifer (adj. A); *canales resiniferi*, resin ducts. **resinous**: resinaceus (adj. A), resinosus (adj. A).  
**resorptus** (part. A): absorbing again; *sulco resorpto marginali laterali*, with absorption channel on the side of the margin.  
**Respectus** (s.m. IV): regard, respect, consideration; *respectu*, with regard to.  
**respondens** (part. B): answering, answering to, corresponding with.  
**rest, for the**: cetero (adv.).  
**resting**: quiescens (part. B), quietus (adj. A), dormiens (part. B); *sporae quiescentes*, resting spores; *cellula in statu quieto*, cell in the resting state.  
**restricted**: restrictus (part. A).  
**restrictus** (part. A): tight, close, restricted.  
**resupinatus** (part. A): resupinate, reversed, inverted by twisting of stalk, turned upside down or apparently so. **resupinus** (adj. A): bent back or backwards. 404  
**retaining**: retinens (part. B). **retained**: retentus (part. A).  
**Rete** (s.n. III. x): network; *rete venularum*, network of veinlets; cf. RETICULUM.  
**retentus** (part. A): retained.  
**reticulatim** (adv.): reticulately, like a network. **reticulatovenosus** (adj. A): net-veined. reticu-

latus (adj. A) reticulate, netted, marked with a network; *cormus tunicus demum in fibras reticulatas brunneas solutus*, corm with tunics as length into brown reticulate fibres breaking up; *folia utrinque et praesertim subitus manifeste reticulata*, leaves on both sides and especially below obviously reticulate. **Reticulum** (s.n. II): network; cf. RETE. **retiformis** (adj. B): net-like. 246  
**Retinaculum**: retinaculum (s.n. II), *abl. sing.* retinaculo; *retinaculum crassum, parte maiore superiore dorso visa late trianguli acuta, parte inferiore cuneata*, retinaculum thick, with the larger upper part seen from the back broadly triangular acute, with the lower part cuneate.  
**retinens** (part. B): keeping back, retaining.  
**retinervis** (adj. B), **retinervius** (adj. A): reticulately nerved. 360  
**Retort-cell**: cellula (s.f. I) lageniformis (adj. B) poro apicali.  
**retortus** (part. A): twisted or bent back.  
**retractus** (part. A): drawn back (as of an embryo hidden between the cotyledons).  
**retro** (adv.): backwards.  
**retrocurvatus** (adj. A), **retrocurvus** (adj. A): curved back. **retroflexus** (part. A): bent back, reflexed; cf. REFLEXUS. **retrorsum** (adv.), **retrorsus** (adv.): backwards. **retrorsus** (adj. A): retrorse, turned backwards. **retroerratus** (adj. A): saw-edged with teeth pointing towards base; cf. RUNCINATUS. 411, 419  
**retusus** (part. A): retuse, i.e. with rounded shallowly notched end. 155  
**revealed**: detectus (part. A), manifestus (adj. A), indicatus (part. A).  
**revera** (*abl. sing.* of *res vera*): in fact, truly, actually.  
**reversus** (part. A): turned about, reversed.  
**Revisio** (s.f. III. vi): revision; *revisio critica generis Epimedii*, critical revision of the genus Epimedium.  
**revocans** (part. B): recalling: *in mentem revocans*, recalling to mind; *in memoriam revocans*, recalling to mind.  
**revolubilis** (adj. B): capable of being rolled back, of becoming revolute. **revolutus** (adj. A): (*in aestivation*) when the two edges of facing leaves are rolled back.  
**revolutus** (part. A): revolute, rolled back from edge (i.e. towards the lower side) or tip; cf. INVOLUTUS. 366, 400  
**Rhacheola** (s.f. I), **Rhachilla** (s.f. I): see RACHILLA.  
**Rhachis** (s.f. III. ii): see RACHIS.  
**Raphe** (s.f. III): see RAPHE.  
**Raphid**: see RAPHID.  
**rheo**: in *Gk. comp.*, pertaining to flowing water; *rheophilus*, loving rivers, etc.

forms *rhomboideus* (adj. A) and *rhomboidalis* (adj. B) are to be avoided; cf. -OIDES. 118

*rhopalo-*: in *Gk. comp.*, club-, cudgel-; cf. CLAVATUS, CLUB-, CORYNE.

*rhyac-*: in *Gk. comp.*, pertaining to rushing streams, torrents; *rhyacophilus*, torrent-loving.

*rhynch-*, *rhyncho-*: in *Gk. comp.*, provided with a snout or beak, i.e. a projecting appendage; *rhynchanthus*, with beaked anthers; *rhynchosarpus*, with beaked fruits.

*rhyti*, *rhytido-*: in *Gk. comp.*, wrinkled, rumpled; *rhytidophyllum*, with wrinkled leaves; *rhytidospermus*, *rhytispermus*, with wrinkled seeds; cf. RUGOSUS.

*Rib*: *costa* (s.f. I) (usually applied to midrib of leaf), *stria* (s.f. I) (used of cryptogams); cf. VEINING. *ribbed*: costatus (adj. A), *nervatus* (adj. A). 343, 344

*Ribbon*: *taenia* (s.f. I).

*rice-like*: oryziformis (adj. B).

*rich*: dives (adj. B).

*Rictus* (s.m. IV): an opened mouth.

*Ridge*: *crista* (s.f. I) *lit.* 'crest'; *dorsum* (s.m. II) *lit.* 'back'; *jugum* (s.m. II), *lit.* 'yoke'; *porca* (s.f. I), *lit.* 'ridge between two furrows made in plowing'. *ridged*: *porcatus* (adj. A).

*rigens* (part. B): stiff, rigid, unbendable. *rigescens* (part. B): *rigescens*, rather stiff, becoming stiff.

*right* (adj.): *rectus* (part. A) 'straight, correct'; *dexter* (adj. A) 'opposite to left'. *right, to the*: *dextrorum*. *rightly*: *recte* (adv.), *rite* (adv.).

*rigid*: *rigidus* (adj. A), *rigens* (part. B). *rigidly*: *rigide* (adv.), *rigidiusculus* (adj. A).

*rigidulus* (adj. A): somewhat rigid. *Rima* (s.f. I): cleft, fissure, chink, crack.

*rimiformis* (adj. B): shaped like a cleft. *rimosus* (adj. A): full of cracks, marked with numerous cracks.

*Ring*: *annulus* (s.m. II). *ring-shaped*: *annularis* (adj. B), *annuliformis* (adj. B). *ringed*: *annulatus* (adj. A). 253

*ringens* (part. B): gaping. 67

*Ripa* (s.f. I): bank of stream or river. *riparius* (adj. A): frequenting banks of streams or rivers, riverside.

*rite* (adv.): properly, rightly, duly, correctly. *rivalis* (adj. B): pertaining to brooks. *rivalling*: *aemulans* (part. B), *aemulus* (adj. A).

*River*: *flumen* (s.n. III. vi), *acc. sing.* *flumen*, *abl. sing.* *flumine*; *fluvius* (s.m. II), *gen. sing.* *fluvii*; *abl. sing.* *fluvio*; *less often annis* (s.m. III. vii), *acc. sing.* *annem*, *abl. sing.* *amne*. pertaining to rivers: *fluvialis* (adj. B), *fluviatricus* (adj. A), *fluvialis* (adj. B), *flumineus* (adj. A), *amnicus* (adj. A); in *Gk. comp.*, *compounds*, *potamo-*; *planta ad fluvii Negro cataractas lecta*, plant at cataracts of Rio Negro collected; in *planiis ad fluviis Danuvium*, in level place at (by) the river Danube; in *sylvis ripariis humidis juxta flumen Amazonum, praecipue securis fluvios Pastasa Bombonasa etc.*, in damp riverside woods near the river Amazon, especially along the rivers Pastasa, Bombonasa, etc.; *ad fluminis Amazonum affluentes inferiores*, at lower tributaries of the river Amazon.

*river-loving*: *potamophilus* (adj. A). *rivularis* (adj. B): pertaining to brooklets. *rivulosus* (adj. A): having fine wavy grooves.

*Rivulus* (s.m. II): brooklet, rivulet.

*Rivus* (s.m. II): brook, small stream.

*Road*: *via* (s.f. I).

*roaming*: *erraticus* (adj. A), *vagus* (adj. A).

*robust*: *robustus* (adj. A), *validus* (adj. A).

*Rock*: *petra* (s.f. I), *abl. sing.* *petra*, *abl. pl.* *petris* 'rock, crag'; *rupes* (s.f. III. vii), *abl. sing.* *rupe*, *abl. pl.* *rupibus* 'steep rock, cliff'; *scopulus* (s.m. II), *abl. sing.* *scopulo*, *abl. pl.* *scopulis* 'pointed or projecting rock, cliff, crag'; *saxum* (s.n. II), *abl. sing.* *saxo*, *abl. pl.* *saxis* 'large stone, detached rock'. *inter saxa rupesque*, among stones and rocks; *habitat in rupibus calcareis*, it lives on limestone rocks; cf. CAUTES.

*rock*: in *L. comp.*, *rupi*, *saxi*, in *Gk. comp.*, *litho-*, *petro-*; *petrophytes*, *rupicola*, growing on rocks. *rock-dwelling*:

*petraeus* (adj. A), *petrensis* (adj. B), *rupestris* (adj. B), *saxatilis* (adj. B).

*rocky*: *petrosus* (adj. A), *rupestris* (adj. B), *saxeus* (adj. A), *saxosus* (adj. A), *scopolus* (adj. A).

*Rod*: *virga* (s.f. I). *rod-shaped*: *bacilliformis* (adj. B), *bacillaris* (adj. B).

*rolled back*: *revolutus* (part. A). *rolled inward*: *involutus* (part. A).

*Roof*: *tectum* (s.n. II), *gen. pl.* *tectorum*.

*Root*: *radix* (s.f. III. i), *acc. sing.* *radicem*, *gen. sing.* *radicis*, *abl. sing.* *radice*, *nom.* and *acc. pl.* *radices*, *gen. pl.* *radicum*, *dat* and *abl. pl.* *radicibus*; *radix longa crassiuscula caulem singulum edens*, root long moderately thick putting forth a single stem; *herba biennis radice dauciformi*, herb biennial with root carrot-like; *radice crassa descendente*, *fibris numerosis tenuibus*, with (main) root thick descending, with fibrous roots numerous slender; *radices pigmentiferae*, *calyptis*

*acutis*, *seriatim fasciculatae*, *usque ad 17*, *quarum primae 3-5 folium rudimentale perforantes*, *ceterae liberae*, roots pigmented, the root-caps acute, clustered in rows, up to 17, of which the first 3-5 pierce through the rudimentary leaf, the rest free; *habitat ad radices arborum*, it lives at or on the roots of trees; *caulis elongatus radices numerosas flexuosa ramosas laeves 3-4 mm. diametro emittens*, stem elongated sending forth roots numerous somewhat zigzag branched smooth 3-4 mm. in diameter; *radicibus paucis fusiformibus ad 1 cm. crassis albis*, with roots few fusiform to 1 cm. thick white; *fasciculus fibrovasalis totam radicis longitudinem percurrents*, fibrovascular bundle running down the whole length of the root.

*rooted, provided with roots*: *radicatus* (part. A). *rooting, putting forth roots*: *radicans* (part. B); *caules subterranei repentes ad nodos radicantes*, stems subterranean creeping rooting at the nodes.

*Rootlet*: *radicella* (s.f. I), *nom. pl.* *radicellae*, *acc. pl.* *radicellas*, *abl. pl.* *radicellis*; *radicella solitariae vel marginales 4-5nae*, rootlets solitary or marginal 4-5 together; *caulis basi radicellas multas emittens*, stem at the base many rootlets putting forth; *radices paucae attenuatae*, *radicellis nullis vel sparsis*, roots few attenuate, with rootlets none or sparse.

*Rootstock*: *caudex* (s.m. III), *gen. sing.* *caudicis*; *caulorhiza* (s.f. I), *gen. sing.* *caulorhizae*; *caudex multiceps lignosus*, *caudiculis brevibus*, rootstock many-headed woody, with short divisions.

*Rope*: *funis* (s.m. III), *funiculus* (s.m. II). *rope-like*: *funicularis* (adj. B), *funiciformis* (adj. B), *funiculosus* (adj. A), *funalis* (adj. B). 48

*roridus* (adj. A): bedewed, dewy, appearing as if covered with fine dewdrops. 303

*rosaceous* (adj. A): like the flower of a single rose (*Rosa*), i.e. with 5 outspread petals and many stamens. 504

*rose*: *roseus* (adj. A); *erubescens* (part. B) 'reddening' has the same meaning. *rose*, *rosy*: in *L. comp.*, *rosei*, *roseo*, in *Gk. comp.*, *rhod-*, *rhodo-*; *roseocinctus*, *rhodocraspedus*, *rosy-edged*; *roseiflorus*, *rhodanthus*, *rosy-flowered*; *roseiflorus* should not be confused with *rosiflorus* or, less correctly, *rosaeflorus*, 'having flowers like a rose'. *roseolus* (adj. A): pink, pale rose.

*Rosette*: *rosula* (s.f. I), *abl. sing.* *rosula*, *nom. pl.* *rosulae*, *abl. pl.* *rosulis*. The alternative form *rosella* (s.f. I) is rarely used; *foliorum rosula sempervirens* c. 10 cm. diametro; rosette of leaves ever-

green c. 10 cm. across; *caulis infra rosulam terminalem foliorum vivorum foliis mortuis vestitus*, stem below terminal rosette of living leaves with dead leaves clothed. *rosetted*: *rosularis* (adj. B), *rosulatus* (adj. A), *rosulans* (adj. B); *folia ad apicem caulis rosulata*, leaves at tip of stem in a rosette; *caulis folia rosularia superans*, stem overtopping the rosette-leaves; *folium caulinum foliis rosularibus simile*, stem-leaf similar to the rosette-leaves; *lamina foliorum rosularium glauca*, blade of rosette-leaves glaucous. 485

*rostellatus* (adj. A): somewhat beaked, provided with a short beak. *Rostellum*: *rostellum* (s.n. II), *abl. sing.* *rostello*.

*rostratus* (adj. A): beaked, provided with a long beak. *rostriformis* (adj. B): beak-like. *Rostrum* (s.n. II): beak. *-rostris* (adj. B), *-rostrus* (adj. A), in *L. comp.*, -beaked; *brevirostris*, short-beaked; *longirostris*, long-beaked; *tenuirostris*, slender-beaked. 148

*Rosula* (s.f. I): rosette, q.v. *rosulans* (adj. B), *rosulatum* (adv.): in the form of a rosette. *rosulatus* (adj. A): rosetted, rosulate, provided with or in the form of a rosette. 485

*rotatus* (adj. A): wheel-shaped. Used of a gamopetalous corolla with a spreading almost flat and circular limb and a very short tube. 69

*rotten, rotting*: *putrefactus* (part. A), *putridus* (adj. A), *putrescens* (part. B), *cariosus* (adj. A); *ad lignum cariosum*, on rotten wood; in *ligno putrescente*, in rotting wood; in *ramis siccis vel putridis*, on dry or rotting branches; *ad caules plantarum putridos*, on rotten stems of plants.

*rotundatus* (part. A): rounded. 153, 172

*rotundus* (adj. A): almost circular, with length to breadth about 6 to 5. 111

*rough*: *asper* (adj. A), *exasperatus* (part. A), *scaber* (adj. A). *roughly* (approximately): *plusminusve* (adv.). *Roughness*: *asperitas* (s.f. III. ii). 266

*round in outline*: *rotundus* (adj. A), q.v. *circularis* (adj. B), *orbiculatus* (adj. A).

*round and solid*: *globosus* (adj. A), *sphaericus* (adj. A). 4, 110, 111

*rounded*: *rotundatus* (part. A).

*Row*: *series* (s.f. V), q.v. in *rows*: *serialis* (adj. B), *seriatus* (adj. A), *seriatim* (adv.); cf. -FARIUS, -STICHUS. 489

*rubbled*: *tritus* (part. A). *Rubbish dump*: *ruderatum* (s.n. II), *abl. pl.* *ruderatis*; *species in ruderatis et hominum domiciliorum vicinis inveniuntur*, the species on rubbish 'dumps and in vicinity of the dwellings of men are

found; *circa ruderata et hominum domicilia sedem figunt*, around rubbish dumps and dwellings of men they fix their abode.

**rubellus** (adj. A): reddish.

**rubens** (part. B): reddish.

**ruber** (adj. A): red; *calyx ruber*, calyx red; *corolla rubra*, corolla red; *corollae limbus in aestivatione rubescens*, sub anthesi ruber, postremo rubro-violaceus, limb of corolla in aestivation reddening, at anthesis red, finally red-violet; *folium subitus rubrum*, leaf red beneath; *floribus rubris*, with red flowers. **rubescens** (part. B): turning red, reddening. **rubicundus** (adj. A): red, ruddy. **rubidus** (adj. A): red. **rubiginosus** (adj. A): rusty-red; *see FERRUGINEUS*. **rubineus** (adj. A): ruby-red (H.C.C. 8. 27). **rubr-**, **rubro-**: in *L. comp.*, red; *see RED-*.

**ruby-red**: rubineus (adj. A).

**ruddy**: rubicundus (adj. A).

**ruderarius** (adj. B): growing among rubbish. **Ruderatum** (s.n. II): rubble, rubbish dump, q.v.

**Rudiment**: rudimentum (s.n. II), *abl. sing.* **rudimento**, **rudimentary**: rudimentalis (adj. B), rudimentarius (adj. A).

**rufus** (adj. A): reddish.

**Ruga** (s.f. I): wrinkle or fold. **rugiformis** (adj. B): wrinkle-like. **rugulosus** (adj. A): somewhat wrinkled. **rugosus** (adj. A), **rugatus** (part. A): wrinkled, rugose. 245

**ruined**: *destructus* (part. A). **ruining**: *destruens* (part. B). **ruinous**; **ruinosus** (adj. A)

**ruminatus** (adj. A): ruminate, i.e. very uneven and looking as if chewed; *albumen durum copiose plicato-ruminatum*, albumen hard copiously folded and ruminate. 242

**rumpens** (part. B): bursting, tearing, breaking open or through irregularly.

**ruincinatus** (adj. A): runcinate, i.e. pinnatifid or coarsely serrate with teeth pointing towards the base; *cf. RETROERRATUS*. 130

**Runner**: *sarmentum* (s.n. II), *abl. sing.* **sarmento**, *nom. pl.* **sermenta**, *abl. pl.* **sermentis**; *stolo* (s.m. III. vi), *abl. sing.* *stolone*, *non. pl.* *stolones*, *abl. pl.* *stoloniibus*; *flagellum* (s.n. II), *abl. sing.* *flagello*, *nom. pl.* *flagella*, *abl. pl.* *flagellis*.

These are used for long slender above-ground lateral rooting shoots, the term *flagellum* or *sarmentum* being applied to a naked whip-like runner rooting and producing leaves at its tip, as in *Fragaria*, and *stolo* to a runner leafy its whole length, as in *Ajuga*, *Glechoma* and *Hieracium*. The term *soboles* is used for

an underground runner, as in *Aegopodium*.

**running**: *profluens* (part. B) (*used only of water*), *currens* (part. B).

**Rupes** (s.f. III. viii): rock, cliff; *cf. ROCK*. **rupestris** (adj. B): rocky, rock-dwelling.

**ruptilis** (adj. B): dehiscing irregularly.

**rupturing**: *rumpens* (part. B).

**ruptus** (part. A): broken, burst asunder.

**ruralis** (adj. B): belonging to the country, rural; *cf. URBANUS*.

**rush-like**: *junceus* (adj. A), *junciformis* (adj. B).

**russet**: *russus* (adj. A).

**rusticanus** (adj. A): belonging to the country, rural.

**rusty-red**: *ferrugineus* (adj. A), *rubiginosus* (adj. A).

**rutilans** (part. B), *rutilus* (adj. A): red with yellow admixture, reddish-orange.

## S

**Sabuleta** (s.n. pl. II): sandy places. **Sabulo** (s.m. III. vi): coarse sand, gravel.

**Sabulosum** (s.n. II): sandy place. **sabulosus** (adj. A): sandy, growing in sandy places.

**saccatus** (adj. A): pouched, bag-shaped, saccate.

**saccharatus** (adj. A): sugary, sugared, looking as if sprinkled with sugar.

**saccharifer** (adj. A): sugar-bearing. **saccharinus** (adj. A): sugary. **Saccharosum** (s.n. II): saccharose. **Saccharum** (s.n. II): sugar.

**sacciformis** (adj. B): bag-shaped, sac-shaped.

**Sacculus** (s.m. II): a little sac, loculus of anther.

**sad**: *tristis* (adj. B). Applied to dull colours.

**Saddle**: *ephippium* (s.n. II), *sella* (s.f. I); *ephippii instar, similis ephippio*, resembling a saddle. **saddle-shaped**: *ephippidoideus* (adj. A), *ephippiomorphus* (adj. A), *selliformis* (adj. B); *sella* (s.f. I) denotes many kinds of seat, *ephippium* a horse-saddle exclusively. 94

**saepe** (adv.): often. **saepenumero** (adv.): again and again. **saepissime** (adv.): very often, nearly always. **saepiuscule** (adv.): fairly frequently.

**Saepes** (s.f. III.): *see SEPES*.

**saffron-yellow**: *croceus* (adj. A).

**sagittatus** (adj. A), *sagittiformis* (adj. B): sagittate, i.e. shaped like an arrow-head with two equal sharp basal lobes directed downwards. 126, 169

**Sal** (s.m. III. v): salt. **saline**: *salsus* (part. A), *salinus* (adj. A).

**salient**: *prominens* (part. B).

**salignus** (adj. A): willowy, willow-like.

**saline**: *salinus* (adj. A), *salsus* (part. A).

**Salinity**: *salsitudo* (s.f. III).

**salmoneus** (adj. A): salmon-pink (H.C.C. 4.12).

**Salsitudo** (s.f. III): salinity.

**salsuginosus** (adj. A): growing in brackish places, i.e. within the reach of salt water.

**salsus** (part. A): salted, saline.

**Salt**: *sal* (s.m. III. v), *gen. sing.* *salis*, *abl. sing.* *sale*, *salt-*: in *Gk. comp.*, *hal-*, *hali-*, *halo-*; *halophilus*, salt-loving, salted, salty: *salinus* (adj. A), *salsus* (part. A); *salsugineus* (adj. A) and *salsuginosus* (adj. A) refer to brackish places; *species in littoribus et in desertis salsis obviae*, species on shores and in salt deserts present; *species littora lacuum salsorum habitantes*, species the shores of salt lakes inhabiting; *palus salsa*, salt marsh.

**saltem** (adv.): at least, at all events; *frutex saltem partibus vegetativis glaber*, shrub at least as to vegetative parts glabrous.

**Saltuarius** (s.m. II): forester, forest officer.

**saltuensis** (adj. B): of or belonging to a forest. **Saltus** (s.m. IV): forest pasture, woodland, valley, ravine, pass. **salver-shaped**: *hypocrateriformis* (adj. B), *hypocraterimorphus* (adj. A).

**Samara**: *samara* (s.f. I), *abl. sing.* *samara*, *same, the*: *nom. sing.* *m. idem, f. eadem, n. idem* (pron.): *planta Jamaicensis eadem est planta Cubensis*, the Jamaican plant is the same as the Cuban plant; *color seminum in eadem planta variabilis*, colour of seeds on the same plant variable; *ex eadem insula*, from the same island; *in eodem rhizomate*, on the same rhizome; *longitudo quasi eadem atque in specie*, the length almost the same as in the species; *eodem modo ac in*, the same as in; *cf. TOT, TOTIDEM*. same time, at the: *simul* (adv.).

**Sand**: *arena* (s.f. I), *sabulo* (s.m. III. vi).

**sandy**: *arenarius* (adj. A), *arenosus* (adj. A), *sabulosus* (adj. A). **Sandy** place: *arenosum* (s.n. II), *sabulosum* (s.n. II), *sabuleta* (s.n. II. pl.). **sand**: in *Gk. comp.*, *ammo-*, *psammo-*, in *L. comp.*, *areni-*; *ammobius*, *arenicola*, dwelling on sand; *ammophilus*, *psammophilus*, sand-loving. **Sandstone**: *lapis* (s.m. III) *arenarius*, *saxum* (s.n. II), *arenaceum*. **sandy**: *arenaceus* (adj. A). **sandal-shaped**: *soleiformis* (adj. B).

**sanguineus** (adj. A): blood-red.

**Sap**: *succus* (s.m. II). **sappy**: *succosus* (adj. A).

**sapidus** (adj. A): savoury, well-flavoured; cf. *INSIPIDUS*.

**sapouaceus** (adj. A), *saponarius* (adj. A): soapy.

**Sapor** (s.m. III. v): taste, q.v.

**saprophytic**: *saprophyticus* (adj. A).

**sarc-**, **sarco-**: in *Gk. comp.*, flesh, fleshy; *sarcanthus*, with fleshy flowers; *sarcophagus*, devouring flesh.

**Sarcocarp**: *sarcocarpium* (s.n. II).

**sarmentous** (adj. A): producing long runners. **Sarmentum** (s.n. II): long slender runner: *see RUNNER, STOLON*.

**sat** (adv.), *satis* (adv.): enough, sufficiently, moderately.

**sativus** (adj. A): sown, planted, cultivated; *opp. of FERUS, SYLVESTRIS*.

**saturate** (adv.): deeply, richly, fully. Applied to colours; *opp. of DILUTE* and *PALLIDE*.

**saucer-shaped**: *acetabuliformis* (adj. B), *catilliformis* (adj. B), *patelliformis* (adj. B), *pateriformis* (adj. B).

**sausage-shaped**: *allantoideus* (adj. A), *botuliformis* (adj. B), *farciminiformis* (adj. B). 88

**Savanna**: *savanna* (s.f. I).

**saw-edged**: *serratus* (adj. A). 182

**saxatilis** (adj. B): dwelling or found among rocks. **Saxosa** (s.n. pl. II): rocky or stony places. **Saxum** (s.n. II): large stone, detached rock; in *saxis graniticis*, on granitic rocks; cf. *ROCK*.

**scaber** (adj. A): scabrous, i.e. rough or gritty to the touch on account of numerous minute projections. **scaberulus** (adj. A), *scabellus* (adj. A): minutely scabrous, slightly rough to the touch.

**scabri-**: in *L. comp.*, rough, scabrous; *scabriiflorus* with scabrous flowers. **scabridus** (adj. A): somewhat scabrous.

**scabridiusculus** (adj. A): minutely scabrous, slightly rough to the touch.

**scabrosus** (adj. A): distinctly scabrous; cf. *RADULANS*. 266, 267

**scalariformis** (adj. B): having ladder-like markings or appearance. **scalaris** (adj. B): ladder-like.

**Scale**: *squama* (s.f. I), *abl. sing.* *squama*, *nom. pl.* *squamae*, *abl. pl.* *squamis*.

**scaled off**: *desquamatus* (part. A).

**scaly**: *squamatus* (adj. A), *squamosus* (adj. A), *lepidotus* (adj. A). 497

**scalpelliformis** (adj. B): shaped like a scalpel or lancet.

**scalpratus** (adj. A): having a sharp or cutting edge.

**sculpturatus** (adj. A): engraved, scratched.

**scaly**: *see under Scale*.

**scandens** (part. B): climbing; cf. *TWINING*.

**scap-**, **scapi-**: in *L. comp.*, relating to a scape, i.e. a leafless or almost leafless peduncle or floral axis arising directly from the rootstock; *scapiflorus*, having

flowers on a scape; *scapifer*, *scapiger*, bearing a scape; *scapiformis*, resembling a scape; *scapus*, having well-developed scapes.

**Scape**: *scapus* (s.m. II), *dat.* and *abl.* *sing.* *scapo*; *scapus robustus viridis glaber sursum angulatus, racemo laxo multifloro terminatus*, scape stout green glabrous angled above, by a loose many-flowered raceme terminated.

**Scaphidium**: *scaphidium* (s.n. II).

**Scar**: *cicatrix* (s.f. III. i), *abl.* *sing.* *cicatrice*, *nom. pl.* *cicatrices*, *abl.* *pl.* *cicatricibus*; *vibex* (s.f. IV) is rarely used; *rami cicatricibus foliorum delapsorum semiorbicularibus notati*, branches with semiorbicular scars of fallen leaves marked; cf. *HILUM*.

**scarcely**: *vix* (adv.), *aegre* (adv.); *vix* is generally used; *aegre* means 'reluctantly, with difficulty'.

**scarious** (adj. A): scarious, i.e. of thin dry membranous texture and not green (*opp. of HERBACEUS*). 316

**scarlet**: *scarlatinus* (adj. A), H.C.C. 19. More or less synonymous, as used by some authors, are *cinnabarinus*, *coccineus*, *miniatius*.

**scarred**: *cicatricatus* (adj. A), *cicatricosus* (adj. A). 252

**scatens** (part. A with *abl.*): abounding with, gushing forth with.

**scattered**: *dispersus* (part. A), *sparsus* (part. A), *displacatus* (part. A), *dissitus* (adj. A), *distans* (part. B), *remotus* (part. A) 'being apart, well separated'. Opposite of *aggregatus*, *approximatus*, *confertus*, *creber*, *spissus*, and of special terms such as *oppositus*, *ternatus*, *verticillatus*. **Scattering**: *dispersio* (s.f. III).

**scattering**: *spargens* (part. B). 481

**scaturiginous** (adj. A): relating to springs of water. *Scaturigo* (s.f. III. vi): gushing or bubbling water, a spring.

**sceleratus** (part. A): wicked, hurtful, poisonous; cf. *NOXIOUS*.

**Sceletus** (s.m. II): skeleton; *nervi sceletum folii constituant*, the nerves constitute the skeleton of the leaf.

**Scheda** (s.f. I), **Schedula** (s.f. I): sheet of paper, hence label; *in scheda*, on an herbarium label; *schedae ad floram exsiccatam Austro-Hungaricam*, labels to the dried Austro-Hungarian flora, i.e. to dried specimens of the Austro-Hungarian flora.

**schist-, schizo-**: *in Gk. comp.*, split, deeply divided; *schistoglossus*, with a split tongue, i.e. labellum; *polyschistus*, much divided; cf. *SCHIZ-*.

**schistaceus** (adj. A): relating to schistaceous rocks, slaty, slate-grey.

**schiz-, schizo-**: *in Gk. comp.*, split, cleft, deeply divided; *schizochilus*, with a split lip; *schizopetalus*, with deeply cut petals; cf. *SCHIST-*.

**Schizocarp**: *schizocarpium* (s.n. II).

**Schola** (s.f. I): lecture, debate, disputation. *scilicet* (adv.): evidently, certainly, of course, that is to say.

**scissus** (part. A): torn. *Scissura* (s.f. I): split, cleft, longitudinal narrow opening; cf. *FISSURE*.

*scitulus* (adj. A): pretty, neat, trim; cf. *CONCINNUS*.

**scler-, sclero-**: *in Gk. comp.*, hard.

**Scleranthum**: *scleranthium* (s.n. II).

**Sclerenchyma**: *sclerenchyma* (s.n. III), *abl.* *sing.* *sclerenchymate*.

**scleroideus** (adj. A), *scleroticus* (adj. A): sclerotic, hardened, of stony texture.

**Sclerotium**: *sclerotium* (s.n. II), *abl.* *sing.* *sclerotio*, *nom. pl.* *sclerotia*, *abl.* *pl.* *sclerotis*.

**scobiculatus** (adj. A), *scobiformis* (adj. B): in fine grains like sawdust, having the appearance of sawdust.

**scoparie** (adv.): in the form of a broom, i.e. fastigiate.

**scopatus** (adj. A): densely covered with bristly hairs. *scopiformis* (adj. B), *scopulatus* (adj. A): like a broom or brush.

**Scopulus** (s.m. II): pointed rock, cliff, crag; cf. *ROCK*.

**scorpioid**: *scorpioides* (adj. A), *scorpioides* (adj. B); *inflorescentia dichotome cymosa, cymae ramis scorpioides, vel cymae ad racemum simplicem scorpioidem reductae*, inflorescence dichotomously cymose, with branches of the cymes scorpioid, or cymes to a simple scorpioid raceme reduced.

**Scrap**: *frustillum* (s.n. II), *fragmentum* (s.n. II) mancum.

**scraped**: *rasilis* (adj. B).

**scratched**: *sculpturatus* (adj. A).

**Scree**: *glara* (s.f. I) adapted from Spanish, *scritha* (s.f. I) adapted from Old Norse; *glara vel scritha est clivus alpestris saxis deorsum conjectis cooperitus*, a scree is an alpine slope wholly covered by rocks thrown downwards.

**Scriptum** (s.n. II): written matter. *scriptus* (part. A): written. *scripsit* (3rd pers. perf. indic. of *scribo*): 'he has written it'.

**Scritha** (s.f. I): scree, q.v.

**scrobicularis** (adj. B), *scrobiculatus* (adj. A): marked by numerous small pits or depressions, minutely pitted; distinct from *LACUNOSUS*, with large pits: cf. *FOVEOLATUS*, *PUNCTATUS*. **Scrobiculus** (s.m. II): pit, depression. **Scrobis** (s.m. III): ditch, trench. 248

**scrotiformis** (adj. B): pouch-shaped. 84

**Sculptura** (s.f. I): sculpturing relief, carving out of surface.

**sculptus** (part. A): engraved, carved out.

**scurfy**: furfuraceous (adj. A).

**scutatus** (adj. A), *scutiformis* (adj. B): shield-shaped, q.v. 19

**Scutellum**: *scutellum* (s.m. II), *abl.* *sing.*

*scutello*; *scutellum dimidiatum partem caryopsis aequans*, scutellum a half part of the caryopsis equalling; see *CARYOPSIS*.

**Scutula** (s.f. I): scutula.

**scyph-, scyphi-, scypho-**: *in Gk. and L. comp.*, cup-; *scyphifer*, *scyphiger*, cup-bearing; *scyphocalyx* with a cup-like calyx; *scyphiformis*, *scyphoides*, cup-like.

**Scyphulus**: *scyphulus* (s.m. II).

**Scyphus**: *scyphus* (s.m. II), *scypha* (s.f. I).

**Sea**: *mare* (s.n. III. x), *gen. sing.* *maris*, *abl.* *sing.* *maris* (*rarely mare*); *in Mari Antillarum*, in the Caribbean Sea: *in Mare Septentrionali et Baltico*, in the North Sea and the Baltic Sea; *solum maris*, bottom of the sea; cf. *MARITIMUS*, *PELAGICUS*.

**sea-green**: *glaucus* (adj. A), *thalassicus* (adj. A).

**Sea-shore**: *littus* (s.n. III), *nom. pl.* *littora*. pertaining to the sea-shore: *litoralis* (adj. B).

**Season**: *tempus* (s.n. IV) *anni*; *ver*, *aestas*, *autumnus*, *hiems sunt tempora anni*, spring, summer, autumn, winter are the seasons of the year.

**seated upon**: *insidens* (part. B) (*usu. with dat.*, rarely with *acc.*); *bulbis rhizomati horizontali repenti ramoso insidentibus*, with bulbs on a horizontal creeping rhizome seated; cf. *SESSILIS*.

**sebaceous** (adj. A): tallowy, with appearance and consistency of tallow. *sebifer* (adj. A): wax-bearing. *sebosus* (adj. A): greasy.

**sec.** see *SECUNDUM*.

**secedens** (part. B): splitting apart, at first attached but later separating.

**secernens** (part. B): secreting, separating off.

**secessus** (part. A): put aside, removed.

**second**: *secundus* (adj. A), *alter* (adj. A).

**secondary**: *secundarius* (adj. A), *partialis* (adj. B); *radii primarii 2-5, secundarii etiam ad 8*, primary rays 2-5, secondary ones furthermore up to 8.

**secreting**: *secernens* (part. B); *cellulae mucilagineum secerentes*, cells secreting mucilage. **Secretion**: *secretio* (s.f. III. vi). **secretary**: *secretarius* (adj. A).

**sectilis** (adj. B): cut into small pieces.

**Section**: *sectio* (s.f. III. vi), *gen. sing.*

*sectionis*, *abl.* *sing.* *sectione*, *nom. and acc.* *pl.* *sectiones*, *dat.* and *abl.* *pl.* *sectionibus*; *revisio specierum sectionis Brachyspathae*, revision of species of section *Brachyspatha*; *cellulae in sectione transversali ellipticae*, cells in transverse section elliptic.

**sectus** (part. A): cut; *in L. comp.*, divided to the base; *pinnatiseptus*, pinnately divided; *triseptus*, divided into three segments.

**secundum** (prep. with *acc.*): according to, following, depending on; *sec. auct. plur.*, *secundum auctores plures*, according to many (more) authors; *secundum iconem Plumieranam*, according to Plumier's illustration.

**secundus** (adj. A): next, following, second; *secund*, i.e. having organs (leaves, flowers, etc.) turned towards the same side. 409, 490

**secus** (prep. with *acc.*): along, on; *secus rhachim*, along the rachis; *secus nervos et venas*, along the nerves and the veins. *-secus*: *in L. comp.*, -side; *altrinsecus*, on the other side; *circumsecus*, on all sides; *utrinsecus* on both sides.

**sed** (conj.): but, yet.

**sedecim** (num. adj.): sixteen.

**sedentarius** (adj. A): sedentary, stationary. **Sedes** (s.f. III): seat, abode, place, position; *species sedis dubiae (incertae sedis)*, species of uncertain position.

**Sediment**: *sedimentum* (s.n. II).

**Seed**: *semen* (s.n. III), *gen. sing.* *seminis*, *abl.* *sing.* *semine*, *nom. pl.* *semina*, *gen. pl.* *seminum*, *abl.* *pl.* *seminibus*; *semen globosum*, *testa nigra fragili*, *cotyledonibus margine tantum coalitis*, *embryone minuto*, seed globose, with seed-coat black fragile, with cotyledons at the margin alone joined together, with embryo minute; *semina tota pilis longis hygrometricis vestita*, seeds entirely in long water-absorbing hairs clothed; *semina compressa dorso convexa, tuberculis seriatis scabra*, *facie concava laevia*, seeds compressed on the back convex, rough with tubercles in rows, on the front concave smooth; *semina brunnea fere tota pilis madefactis elastice erigentibus vestita*, seeds brown almost entirely with hairs when made wet elastically raising themselves clothed; *semina parva uniserialia aut biserialia globosa aut pyriformia exalata*, *funiculum circa hilum in arillum album cristatum expanso*, seeds small in 1 series or in 2 series globose or pear-shaped wingless, with the funicle around the hilum into a white crested aril expanded; *semina oblique ovata, pleraque latere altero*

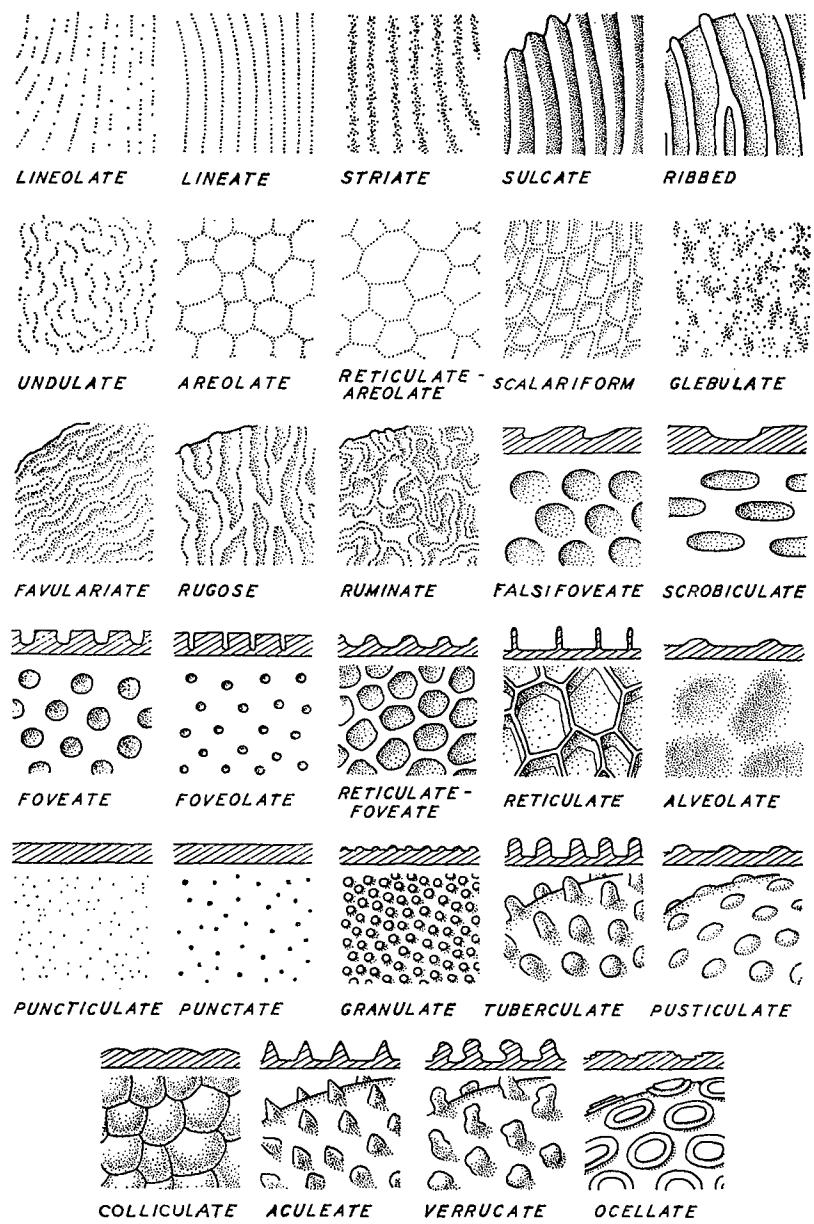


Fig. 38 Types of Surfaces of Seeds

(Drawing by Margaret R. Murley, from *American Midland Naturalist*, 46; 1951)

*convexa*, *altero acutata*, *sed saepius mutua pressione multiangulata*, seeds obliquely ovate, for the most part with one side convex, the other acutate, but very often on account of mutual pressure, many-angled. *seeded*: in *L. comp.*, *-seminalis*, in *Gk. comp.*, *-spermus*; *capsula quadriseminalis*, *capsula tetrasperma*, capsule four-seeded. Usually it is best simply to use numerals, e.g. *capsula 2-4-seminalis*, *capsula semibus 2-4*, *capsula semina 2-4 habens*. See *-SPERMUS*. *seed-bearing*: *seminiger* (adj. A), *seminifer* (adj. A).

*Seed-bed*: *seminarium* (s.n. II).

*Seed-coat*, *outer*: *testa* (s.f. I), *abl. sing. testa*. In texture it may be *cartilaginea* (adj. A), i.e. hard and tough, *crustacea* (adj. A), i.e. thin, hard and brittle, *mucilaginosa* or *mucosa* (adj. A), i.e. mucilaginous, when moist (*madida*) or made wet (*madefacta*). For description of surface the following glossary has been compiled from M. R. Murley, 'Seeds of the Cruciferae', *Amer. Midl. Nat.* 46: 1-81 (1951): *aculeate* (*aculeata*, adj. A), i.e. bristly with small pointed projections; *alveolate* (*alveolata*, adj. A), i.e. honey-combed, the elevation not rounded off, the depression or area outlined by the elevation being called an *insterstice* (*interstitium*, s.n. II); *areolate* (*areolata*, adj. A), marked off into little rounded areas by fine lines; *colliculate* (*colliculata*, adj. A), i.e. with rounded broad elevations closely spaced covering the seed-coat; *falsifoveate* (*falsifoveata*, adj. A), i.e. with pits that do not have the same depth throughout, as a little depression made laterally; *favulariate* (*favulariata*; adj. A), i.e. with the surface finely ribbed, the ribs separated by zigzag furrows; *foveate* (*foveata*, adj. A), i.e. pitted; *foveolate* (*foveolata*, adj. A), i.e. marked with little pits; *furrowed* (*sulcata*, adj. A); *glebulate* (*glebulata*, adj. A), i.e. with small clumps of irregularly placed granules; *lineate* (*lineata*, adj. A), i.e. marked with fine lines; *lineolate* (*lineolata*, adj. A), marked with fine broken lines; *punctate* (*punctata*, adj. A), i.e. marked with dots looking like pencil marks variously scattered; *puncticulate* (*puncticulata*, adj. A), i.e. minutely punctate, the surface being almost smooth; *ocellate* (*ocellata*, adj. A), i.e. having eye-like depressions, each with a raised circular border; *pusticulate* (*pusticulata*, adj. A), i.e. with small broad slight elevations not so high or abundant as on a *colliculate* surface and

not having as abrupt elevations as a minutely tuberculate surface; *reticulate* (*reticulata*, adj. A), i.e. with a raised network of narrow and sharply angled lines frequently presenting a geometric appearance, each area or depression outlined by the reticulum being an interspace (*interstitium*, s.n. II, *interspatium*, s.n. II); *reticulate-foveate* (*retifoveata*, adj. A), i.e. intermediate between reticulate and foveate; *rugose* (*rugosa*, adj. A), i.e. wrinkled, the irregular elevation making up the wrinkles and running mostly in one direction; *rugulose* (*rugulosa*, adj. A), i.e. with very small wrinkles; *ruminata* (*ruminata*, adj. A), i.e. penetrated by irregular channels giving an eroded appearance and running in different directions; *scalariform* (*scalariformis*, adj. B), i.e. with small fairly regular cross-band markings suggesting the steps of a ladder; *scrobiculate* (*scrobiculata*, adj. A), i.e. with elongated shallow depressions or pits; *smooth* (*laevis*, adj. B) and *glossy* (*nitida*, adj. A) if *polished* (*polita*, adj. A); *striate* (*striata*, adj. A), i.e. marked with a series of fine narrow parallel bands (*striae*, s.f. I pl.) wider than the lines of a *lineate* surface; *sulcate* (*sulcata*, adj. A), i.e. grooved or furrowed with long V-shaped depressions; *tuberculate* (*tuberculata*, adj. A), i.e. with small smooth rounded projections or knobs; *verrucate* or *warty* (*verrucata*, adj. A), i.e. with irregular projections or knobs; *verruculata* (*verruculata*, adj. A), i.e. covered with closely spaced tiny irregular projections; *testa laevis madida intumescens*, *denum mucilaginosa*, seed-coat smooth when moistened swelling up, at length mucilaginous.

*Seed-list*: *delectus* (s.m. IV) *seminum*, *index* (s.c. III. ii) *seminum*, *enumeratio* (s.f. III. vi) *seminum*, *catalogus* (s.m. II) *seminum*; *Delectus Seminum ex Horto Cantabrigiensis Academiae*, Selection of Seeds from the Garden of the Cambridge Academy, i.e. the Cambridge University Botanic Garden; *Index Seminum quae Hortus Botanicus Imperialis Petropolitanus pro mutua commutatione offert*, Index of Seeds which the Petrograd Imperial Botanic Garden for reciprocal exchange offers.

*Seedling*: *plantula* (s.f. I).  
*seemingly*: *ut videtur* (adv. phrase).  
*seen*: *visus* (part. A), *spectatus* (part. A); *externus visus*, seen from outside; *a latere visus*, seen from the side; *a vertice visus*, in vertical view; *seè* *VIEW*, *VISUS*.

Segetes (s.f. III. ii): cornfield. *segetalis* (adj. B): belonging to or growing among standing corn.

Segment: segmentum (s.n. II), *abl. sing.* segmento, *nom. pl.* segmenta, *abl. pl.* segmentis. segmented: segmentatus (adj. A) *in class. L.* 'ornamented with tinsel'. segregatus (part. A): set apart, separated. *sejunctum* (adv.): separately. *sejunctus* (part. A): disunited, separated, isolated. seldom: raro (adv.).

selected: lectus (part. A), selectus (part. A), desumptus (part. A).

*sellaeformis* (adj. B), *selliformis* (adj. B): saddle-shaped, q.v. *Sella* (s.f. I), saddle, q.v. 94

*semel* (adv.): once, a single time; *semel atque iterum*, once and again; *semel aut iterum*, only once or twice; *plus semel*, more than once; *ramis semel aut bis dichotomis*, with branches once or twice dichotomous.

*Semen* (s.n. III. vi): seed, q.v.

semi-: *in L. comp.*, half-; *semiadhaerens*, semiadnatus, adhering in lower part; *semiamplexicaulis*, with leaf-base half-embracing the stem; *semicordatus*, with one lobe cordate; *semiduplex*, semi-double, with the outer stamens petaloid, the inner stamens normal; *semicircularis*, *semiorbiculatus*, semicircular; *semi-septatus*, half-partitioned; *see HEMI-*

*Semifacies* (s.f. V): half of leaf in *Selaginella*; *folia lateralia semifacie superiore basi cordata*, *semifacie inferiore basi truncata*, lateral leaves with upper half cordate at base, with lower half truncate at base; *sporophylla dorsalia semifaciem in lumen inclinatum latiorem et semifaciem alteram dimidio angustiorem gerentia*, dorsal sporophylls bearing the half inclined in the light broader and the other half narrower by half; *semifacie luci inclinata laete viridi et semifacie altera pallescente*, with the half inclined to the light bright green and the other half paler.

*seminalis* (adj. B): relating to the seed.

*Seminarium* (s.n. II): nursery, seed-plot. *seminifer* (adj. A), *seminiger* (adj. A): seed-bearing.

*seminiger* (adj. A): seed-bearing.

*Semita* (s.f. I): footpath.

*semotus* (part. A): distant, far removed.

*semper* (adv.): always, at all times.

*semervirens* (adj. B): evergreen.

*senatus* (adj. A): sienna.

*Senectus* (s.f. III): old age; *in senectute*, in old age. *senescens* (part. B): growing old, becoming aged.

*seni* (num. adj. distr. pl.): six each, six together; *see six*.

*semisim* (adv.): gently, gradually; *cf. GRADATIM, PAULATIM*.

*sensitive*: *sensitivus* (adj. A) 'responsive to stimulus', *sensibilis* (adj. B) 'manifesting irritability'.

*Sensus* (s.m. IV): perception, opinion, thought, sense, view, signification, meaning; *sensu stricto*, in a narrow sense; *sensu lato*, in a broad sense, with a wide or general interpretation; *sensu Engleri*, in the opinion of Engler, as interpreted by Engler.

*Sententia* (s.f. I): way of thinking, judgment, opinion; *ex mea sententia*, in my opinion; *juxta meam sententiam*, according to my opinion; *cf. JUDEX, OPINION*. *senticosus* (adj. A): full of thorns or prickles.

*seorsim* (adv.), *seorsum* (adv.): separately; *seorsim impr. ex Actis Societatis*, separately printed, i.e. issued as a separate from, the Transactions (Abhandlungen, etc.) of the Society (Gesellschaft, etc.). *seorsus* (adj. A): sundered, separate.

*Sepal*: *sepalum* (s.n. II), *acc. sing.* *sepalum*, *gen. sing.* *sepali*, *dat. and abl. sing.* *sepalo*, *nom. and acc. pl.* *sepala*, *gen. pl.* *sepalorum*, *dat. and abl. pl.* *sepalis*; *sepalum summum ovatum*, uppermost sepal ovate; *calcar sepalo suo aequilongum vel paulo longius*, spur its own sepal equaling or a little longer than; *sepala lateralia ovata, inferiora et supera lanceolata*, lateral sepals ovate, lower sepals and upper sepals lanceolate; *sepala patentia 2 exteriora trinervia, 2 interiora tantum nervo centrali prominente*, sepals spreading, 2 outer three-nerved, 2 interior with only the central nerve prominent; *sepala dextrorum tegentia* (i.e. *sinistrorum convoluta*), *libera vel ad ½ longitudinis coalita*, sepals overlapping to the right (i.e. twisted to the left), free or to ½ of the length joined; *sepalis a bracteolis omnino obtectis*, with sepals by the bracteoles wholly covered; *sepalis ovatis rotundatis viridibus*, with sepals ovate rounded green; *cf. CALYX*.

*sepalinus* (adj. A): relating to sepals. *sepaloideus* (adj. A): *sepal-like*. *sepalus* (adj. A): *in Gk. and L. comp.*, -sepalled; *erythrosepalus*, red-sepalled.

*separabilis* (adj. B): separable, not adnate. *separate, separated*: *separatus* (part. A), *discretus* (part. A), *disjunctus* (part. A), *disparatus* (part. A), *divulsus* (part. A), *segregatus* (part. A), *sejunctus* (part. A), *seorsus* (adj. A); *areolae rimis profundis separatae*, areoles by deep cracks separated, *cf. DISTANT, SCATTERED*. *separately*: *discretim* (adv.), *disjuncte* (adv.), *disjunctim* (adv.), *seorsim* (adv.), *seor-*

*sum* (adv.): separating; *secedens* (part. B), *discedens* (part. B). *Separation*: *separatio* (s.f. III). 451

*Sepe* (s.f. III. viii): hedge; *sepium*, of hedges. *sepiarius* (adj. A): growing in hedges, used for hedging.

*sepiaceus* (adj. A): sepium.

*sepimentum* (s.n. II): partition.

*sept-, septem-, septen-*: *in L. comp.*, seven; *septangularis*, 7-angled; *septemfidus*, 7-cleft; *septifarius*, arranged in sevens; *septifolius*, 7-leaved; *see HEPTA-, SEVEN*.

*septalis* (adj. B): belonging to a septum.

*septatus* (adj. A): septate, i.e. divided by partitions. 240

*septem* (num. adj.): seven. *septenarius* (adj. A), *septenatus* (adj. A): consisting of seven. *septeni* (num. adj. distr.): seven each; *see SEVEN*.

*serpentinus* (adj. A): snake-like, i.e. bent backwards and forwards into a wavy line (*cf. FLEXUOSUS, MEANDRINUS*); growing on serpentine rock (*cf. OPHIOLITHICUS*).

*Serratura* (s.f. I): serration, toothing. *serratulus* (adj. A): serrate, i.e. saw-edged with sharp teeth pointing forwards, as opposed to *RETROSERRATUS*, q.v., with teeth pointing backward; *cf. CRENATUS, DENTATUS*. *serulatus* (adj. A): finely serrate. 182

*Sertum* (s.n. II): wreath or garland of flowers. Used figuratively in book-titles to indicate a selection of plants. *serus* (adj. A): late. *servatus* (part. A): preserved, kept unharmed; *typus in Herb. Mus. Brit. servatus*, type in Herbarium of the British Museum preserved.



Fig. 39 Dehiscence of Fruits

a, indehiscent; b, septicidal; c, loculicidal; d, septifragus marginicidal; e, septifragus loculicidal

*septentrionalis* (adj. B): north, northern; *cf. BOREALIS, AUSTRALIS, MERIDIONALIS*.

*septicidalis* (adj. B), *septicidus* (adj. A): septicidal, i.e. when a capsule splits into its component carpels along the lines of junction or the dissepiments (inward-running partitions), as opposed to *LOCULICIDALIS*, q.v., when the carpels split down the back half-way between (and not along) the lines of junction or the dissepiments. *septifragus* (adj. A): septifragal, i.e. when the valves or backs of carpels break away from the dissepiments. *Septum* (s.n. II): partition, cross-wall, dissepiment.

*septiens* (adv.), *septies* (adv.): seven times. *septimus* (adj. A): seventh.

*sequens* (part. B): next, next following; *in specie sequenti*, in the species following.

*serialis* (adj. B), *seriatius* (adj. A): arranged in rows; *cf. -FARIUS*. *seriatim* (adv.): in rows, serially. 489

*sericeus* (adj. A): sericeous, i.e. silky with long straight close-pressed glossy hairs.

*Series*: *series* (s.f. V), *gen. sing.* *seriei*, *abl. sing.* *serie*, *nom. pl.* *series*, *gen. pl.* *serierum*, *abl. pl.* *seriebus*.

*sero* (adv.): late, at a late hour. *serotinus* (adj. A): late-coming, late to leaf or flower or to appear (*opp. of PRAECOX*, q.v.).

*serpens* (part. B): creeping; *see REPENS*.

*sesqui-*, *sessili-* *in L. comp.*, sessile-; *sessilanthrus*, with sessile anthers; *sessiliflorus*, with sessile flowers; *sessifolius*, with sessile leaves. *sessilis* (adj. B): sessile, stalkless, or apparently so, sitting close upon the body that supports it. 438

*Seta* (s.f. I): bristle, bristle-like organ, as the fruit-stalk (sporophore) of a moss. *setaceus* (adj. A), *setiformis* (adj. B): setaceous, bristle-like. *setifer* (adj. A): bristle-bearing, *setosus* (adj. A): setose, bristly, i.e. beset with scattered ascending stiff hairs. *Setula* (s.f. I): a kind of cystidium. *setulosus* (adj. A): minutely setose.

*seu* (conj.): or, q.v.

*seven*: *septem* (num. adj. indecl.) 'seven', *septimus* (adj. A) 'seventh', *septies* (adv.), *septiens* (adv.), 'seven times'.

*seven-*: *in L. comp.*, *septem-*, *in Gk. comp.*, *hepta-*; *septemlobus*, *heptalobus*, 7-lobed; *see HEPTA-, SEPTEM-*.

*several*: aliquot (adj. indecl.), *plures* (adj. pl. B); *aliquot per utriculum*, several to an utricle. *several times*: *complurios* (adv.), *compluries* (adv.), *aliquoties* (adv.).

Sex: *sexus* (s.m. IV), *nom. pl. sexus*; *sexus masculinus*, male sex, symbol ♂; *sexus femineus*, female sex, symbol ♀.

sex (num. adj. indecl.): six, 6. *sex-*: in *L. comp.*, six-; *sexdentatus*, 6-toothed *sexfidus*, 6-cleft; *sexlocularis*, 6-chambered; *sexpartitus*, 6-parted; *sexvalvis*, 6-valved; see HEXA-, SIX-, *sexiens* (adv.), *sexies* (adv.): six times. *sextus* (adj. A): sixth.

*sexualis* (adj. B): sexual; *Ego sexuale systema secundum numerum proportionem situm staminum cum pistillis elaboravi* (Linnaeus, *Phil. bot.* No. 68; 1751), I have worked out the sexual system according to the number, relation and position of the stamens with the pistils. *sexualiter* (adv.): sexually.

*shade*: *umbra* (s.f. I), *acc. sing. umbram*. *shady*: *umbrosus* (adj. A).

*shaft*: *scapus* (s.m. II), q.v.

*shaggy*: *hirtus* (adj. A), *villosus* (adj. A). 273

*shallow*: *vadum* (s.n. II). *shallow*: *vadosus*, non *altus* (adj. A), non *profundus* (adj. A).

*shape*: *forma* (s.f. I); cf. FORMED.

*sharp*: *acus* (part. A) 'pointed', *acer* (adj. B) 'pungent, bitter', *amarus* (adj. A) 'bitter, sour', *argutus* (adj. A) 'distinct, clear'. *sharply*: acute, less often *argute* (adv.). 149

*shattered*: *diffractus* (part. A).

*sheath*: *vagina* (s.f. I), *abl. sing. vagina*, *nom. pl. vaginae*, *gen. pl. vaginarum*, *abl. pl. vaginis*; *folia basi vaginis foliorum deciduorum persistentibus inter se obvolvitis obtecta*, *vaginarum tandem deciduarum basibus cupelliformibus*, leaves at base covered with the sheaths of deciduous leaves persistent between themselves wrapped around with the bases of the at length deciduous sheaths shaped like small casks; *vaginae mucosae aetate proiecta interdum diffuentes semper hyalinæ*, sheaths mucous with advanced age sometimes disappearing (wasting away) always hyaline; *trichomata intra vaginam plura*, trichomes within the sheath several; *trichomata evaginata aut vaginis pertenuibus fragilibus mucosis inclusa*, trichomes sheathless or by sheaths very thin fragile mucous enclosed. *sheathed*: *vaginatus* (adj. A). *sheathing*: *vaginans* (adj. B). 445

*shed*: *exutus* (part. A).

*sheen*: *nitor* (s.m. III): *plantae nitore fere destitutae*, plants almost lacking sheen. *shell of mollusc*: *concha* (s.f. I): *in saxis conchisque*, on rocks and shells. *shell-shaped*: *conchatus* (adj. A), *conchiformis* (adj. B).

*shield-shaped*: *clypeatus* (adj. A), *scutatus* (adj. A), *scutiformis* (adj. B). The Roman *clypeus* was a small round shield, the *scutum* a large oblong shield. 19, 26

*shingle*: *glarea* (s.f. I): *glarea maritima*, seaside shingle; *glarea fluvialis*, river shingle.

*shiny*: *nitens* (part. B), *nitidus* (adj. A); cf. LAMPRO-, LUCENS, POLISHED. 294

*ship*: *navis* (s.f. III).

*Shoot*: *surculus* (s.m. II). *Short-shoot*: *brachyblastus* (s.m. II).

*shooting forth*: *propullans* (part. B).

*shore*: *litus*, *littus* (s.n. III); *plantae in litus ejectae*, plants cast on to the shore. pertaining to the shore: *litoralis*, *littoralis* (adj. B).

*short*: *brevis* (adj. B), *curtus* (adj. A).

*short-*: in *Gk. comp.*, *brachy-*, in *L. comp.*, *brevi-*. very short: *brevissimus* (adj. A), shortened: *abbreviatus* (part. A).

*shortly*: (in length) *breviter* (adv.); (in time) *mox*. Shortness: *brevitas* (s.f. III), *gen. sing. brevitatis*.

*shoulder*: *humerus* (s.m. II). *shouldered*: *humeratus* (adj. A).

*showing*: *praebens* (part. B); *marginibus duas series praebentibus*, with margins showing two series.

*shrimp-red*: *palaemoneus* (adj. A).

*Shrub, Bush*: *frutex* (s.m. III. i), *nom. pl. frutices*; *frutex omnino glaber ramosissimus semperirens ad 1 m. altus, ramulis hornotinis ancipitibus*, shrub entirely glabrous much branched evergreen to 1 m. high, with this year's branchlets two-edged. shrubby: *fruticosus* (adj. A).

*Shrublet*: *fruticulus* (s.m. II), *nom. pl. fruticuli*; *fruticuli ericoidei capenses madagascarienses et mauritanici sed non mauritanici*, shrublets heath-like of the Cape, Madagascar and Mauritius but not Morocco.

*sic* (adv.): in this manner, thus.

*siccatus* (part. A): dried. *Siccitas* (s.f. III. ii): dryness, dried state; in *siccitate*, in a dried state. *siccus* (adj. A): dry; in *siccō*, in a dry state.

*sick*: see DISEASED.

*sickle-shaped*: *falcatus* (adj. A).

*sicut* (adv.): so as, just as.

*sicyoideus* (adj. A): gourd-shaped, i.e. swollen below with a long neck above; cf. LAGENIFORMIS.

*Side*: *latus* (s.n. III. iv), *gen. sing. lateris*, *abl. sing. latere*, *nom. pl. latera*, *gen. pl. laterum*, *abl. pl. lateribus*, in sense of 'flank, right or left side'; *pagina* (s.f. I), *gen. sing. paginae*, *abl. sing. pagina*, *nom. pl. paginae*, *gen. pl. paginaram*, *abl. pl. paginis*, in sense of 'page, upper

or lower surface, back or front side'; *facies* (s.f. V), *gen. sing. faciei*, *abl. sing. facie*, *nom. pl. facies*, *gen. pl. facierum*, *abl. pl. faciebus*, in sense of 'aspect, face'; *folia basi inaequilatera*, *latere altero quam alterum 2-3 mm. longius descendente*, leaves at base unequal-sided, with one side than the other 2-3 mm. lower descending; *folia nervis utroque costae latere 8*, leaves with nerves to both sides of the mid-rib 8; *gluma a latere compressa*, *lateribus ciliatis*, glume from the side compressed, with the sides ciliate; *latus valvare asymmetricum*, valvar side asymmetrical; *frustula e latere visa*, frustules from the side observed; *flagellum unicum e latere vel apice oriens*, flagellum one from the side or apex arising; *folia pagina superiore viridi glabra inferiore rubra hirsuta*, leaves with the upper surface green glabrous the lower red hirsute; *folia in pagina superiore setis aequalibus vestita*, leaves on the upper surface with bristles of equal length clothed; *lamina pubescens deinde facie inferiore glabrescens*, blade pubescent afterwards at the lower face becoming glabrous; *hinc . . . illinc . . .*, on this side . . . , on that side . . . ; *utrinque*, on both sides; *undique*, on all sides. side-: in *L. comp.*, *lateri-*, in *Gk. comp.*, *pleur-*, *pleuro-*.

*sieve-like*: *cribratus* (adj. A), *cribrosus* (adj. A); cf. LATTICED.

*sigillatim* (adv.): markedly. *sigillatus* (adj. A): *sigillate*, i.e. as if marked with impressions of a seal.

*sigmoideus* (adj. A): sigmoid, i.e. curved like the letter S (Gk. σ, sigma); *valvae plus minus sigmoideae*, valves more or less sigmoid.

*Signum* (s.n. II): mark, sign.

*siliceus* (adj. A): *siliceous*, flinty.

*Silicule*: *silicula* (s.f. I), *gen. sing. silicula*, *nom. pl. siliculae*, *abl. pl. siliculis*.

*Siliqua*: *siliqua* (s.f. I), *gen. sing. siliqua*, *nom. pl. siliquae*, *abl. pl. siliquis*. In Roman times *siliqua* was mostly used for the pod of Leguminosae, but also applied to capsules and follicles; *siliqua elliptica compressa polysperma*, *rarius oligosperma*, *valvis planiusculis septo membranaceo*, *stylo elongato*, siliqua elliptic compressed many-seeded, rarely few-seeded, with valves rather flat, with septum membranous, with style elongated; *siliqua elongata teres*, *continua vel moniliformis*, *laevis vel costata*, *coriacea suberosa vel fungosa*, *intus continua vel isthmus transversis multilocularis*, *locellis seminiferis interdum locellis vacuis alternantibus*, siliqua elongated terete con-

tinuous (uninterrupted) or moniliform (like a string of beads), smooth or ribbed, leathery corky or spongy, inside continuous or by transverse contractions many-chambered, with chambers (locellæ) seed-bearing sometimes with chambers empty alternating; *siliqua a latere compressa*, *valvis carinatis*, siliqua from the side compressed, with valves keeled; *siliqua globosa vel inflata*, *hispida vel subechinata*, siliqua globose or inflated, hispid or almost spiny. *siliquose*: siliquous (adj. A).

*silky*: *sericeus* (adj. A), *bombycinus* (adj. A); cf. COTTONY.

*Silva*: see SYLVA. *silvaticus*: see SYLVATICUS. *silvestris*: see SYLVESTRIS.

*silvery*: *argenteus* (adj. A); in *Gk. comp.*, *argyro-*.

*similaris* (adj. B): similar. *similis* (adj. B): like, resembling, similar (used with gen. or dat.). *similiter* (adv.): in like manner. *Similitudo* (s.f. III. vi): likeness, resemblance, similarity.

*simplex* (adj. B): simple, undivided, unbranched, of one piece or series, not consisting of several distinct parts (*opp. of COMPOSITUS, DUPLEX, RAMOSUS, etc.*); *caulis simplex uniflorus*, stem unbranched one-flowered; *caule simplici unifloro*, with stem unbranched one-flowered; *pili longi simplices nec ramosi*, hairs long simple not branched; *folia simplicia pilis longis simplicibus vestita*, leaves undivided with long simple hairs clothed. *simplicatim* (adv.): markedly. *simplicatus* (adj. A): *simplicate*, i.e. as if marked with impressions of a seal.

*simplici-*: in *L. comp.*, simple, undivided; *simplicicaulis*, with unbranched stem; *simplicifolius*, with simple leaves; *simplicifrons*, with undivided frond; *simplicivenius*, with unbranched veins.

*simplicissimus* (adj. A): completely unbranched, quite entire. *simpliciter* (adv.): simply, only, plainly. *Simplum* (s.n. II): medicinal herb, simple. 201, 202

*simul* (adv.): at the same time.

*simulans* (part. B): imitating, resembling; cf. MENTIENS.

*simultaneus* (adj. A): at the same time,

simultaneous: *folia et flores simultanei*, leaves and flowers together; cf. COAE-

TANEUS.

*sine* (prep. with abl.): without, lacking (*opp. of CUM*); *nomen sine descriptione*, name without description, nomen nudum; *sine floribus*, without flowers; *sine numero*, without a number.

*singularis* (adj. B): alone, solitary, alone of its kind, unique. *singulariter* (adv.), *singulatim* (adv.): singly, separately, one by one, individually. *singulus* (adj. A): one to each, cf. SOLITARIUS, UNICUS.

**sinister** (adj. A): on the left, left. **sinistorum** (adv.): towards the left; cf. TWINING. 418

**sino-corallinus** (adj. A): chinese-coral (H.C.S. 6.14).

**sinuato-dentatus** (adj. A): sinuate and dentate at the same time. **sinuatus** (part. A): sinuate, i.e. strongly waved, the margin alternately uneven with concavities and convexities. **sinuolatus** (adj. A): faintly sinuate; cf. REPANDUS. **sinuosus** (adj. A): sinuate, very sinuate. 188

**Sinus** (s.m. IV): recess, rounded inward curve between two projecting lobes, bay; *folia profunde cordata sinus basali ob margines contiguos vel imbricatos valde angusto vel clauso*, leaves deeply cordate with the basal sinus very narrow or closed on account of the touching or overlapping margins; in *Sinu Neapolitano*, in the Bay of Naples; in *sinibus Europaeis et Africanis Oceani Atlantici*, in European and African bays of the Atlantic Ocean; *staminodia sub sinibus corollae affixa*, staminodes below the sinuses of the corolla inserted.

**Siphon** (s.m. III. vi): siphon, i.e. elongated tube in frond of alga; *siphonibus distinctus linearibus non utriculatis*, with tubes separate, linear not bladder-like. **siphon-, siphono-, siphonius**: in *Gk. comp.*, relating to a tube or pipe; *monosiphonius*, with a single tube; *polysiphonius*, with many tubes; *siphonanthus*, with a tubular flower; *siphonocalyx*, with a tubular calyx. **siphonaceus** (adj. A): with elongated tubes or non-septate filaments.

**sistens** (part. B): standing, appearing, supporting, placing.

**Situs** (s.m. IV): position occupied by an organ; *situs foliorum*, arrangement of leaves, phyllotaxis.

**situs** (part. A): set down, placed, left, permitted; cf. PLACE.

**sive**: or, q.v.

**six**: sex (num. adj. indecl.) 'six', seni (num. adj. distr. pl.) 'six each, six together', sextus (adj. A) 'sixth', sexies (adv.), sexiens (adv.) 'six times'; *sementa in quaque serie quatuor ad sex*, segments in each series four to six; *stamina sex vel duodecim rarius infinita*, stamens 6 or 12 more rarely indefinite; *folia semper sena*, leaves always six. **six-**: in *L. comp.*, sex-, in *Gk. comp.*, hexa-; *sexangularis*, *sexangulus*, *hexagonus*, 6-angled; *sexflorus*, *hexanthus*, 6-flowered; *sexfarius*, *hexastichus*, 6-rowed; *sexstylosus*, *hexastylis*, *hexastylus*, 6-styled; *sexualis*, *hexapterus*, 6-winged; see HEXA-, SEX-.

**Size**: *amplitudo* (s.f. III. vi), *abl. sing. amplitudine*; *magnitudo* (s.f. III. vi), *abl. sing. magnitudine*; *statura* (s.f. I), *abl. sing. statura*; *statura variabilis, pro genere minima, perpusilla, pusilla, parva, minor, mediocris, magna, major, vel maxima*, size variable, for the genus very small indeed (the smallest), very small, very small (bigger than *perpusilla*), small, smaller, medium-sized, large, larger, or very large (the greatest); *folia caulina amplitudine admodum variabilia*, caulin leaves as to size very variable.

**Skeleton**: *sceletus* (s.m. II).

**Sketch**: *definatio* (s.f. III. vi).

**Skin**: *pellis* (s.f. III), *gen. sing. pellis*.

**skinned**: *recutitus* (adj. A).

**Sky**: *caelum* (s.n. II). **sky-blue**: *caelestis* (adj. B).

**slanting**: *obliquus* (adj. A); in *Gk. comp.*, *plagio-*. **slantingly**: *oblique* (adv.).

**slate-coloured**: *ardesiacus* (adj. A). **slate-blue**: *lazulino-ardesiacus* (adj. A).

**dark slate-blue**: *atro-ardesiacus* (adj. A).

**slate-purple**: *purpureo-ardesiacus* (adj. A). **slate-violet**: *violaceo-ardesiacus* (adj. A). **slaty**: *schistaceus* (adj. A).

**Sleep**: *somnus* (s.m. II).

**slender**: *gracilis* (adj. B), *exilis* (adj. B), *tenuis* (adj. B).

**Slide, glass**: *lamina* (s.f. I) *vitrea*.

**slight**: *exiguus* (adj. A). **slightly**: *leviter* (adv.) 'lightly', *parum* (adv.) 'a little', *plus minusve* (adv.) 'more or less', *leniter* (adv.) 'mildly'; cf. SOMEWHAT. **Slime**: *mucus* (s.m. II); in *Gk. comp.*, *myx-*, *myxo-*. **slimy**: *mucosus* (adj. A). 301

**slipper-shaped**: *calceiformis* (adj. B), *calceolatus* (adj. A).

**slippery**: *lubricus* (adj. A).

**slipping away**: *elabens* (part. B).

**Slit**: *rima* (s.f. I).

**Slope**: *clivus* (s.m. II), *declinatus* (s.f. III. ii). **sloping**: *devexus* (adj. A). **sloping downwards**: *declinis* (adj. B), *devexus* (adj. A). **sloping upwards**: *acclivis* (adj. B), *subvexus* (adj. A).

**slow**: *tardus* (adj. A); *motus tardus*, movement slow. **slowly**: *tarde* (adv.), *lente* (adv.), *cunctanter* (adv.); *cellula dum quieta, lenteve prolabens*, cell when resting or slowly gliding.

**small**: *parvus* (adj. A), *pisillus* (adj. A). **very small**: *parvulus* (adj. A), *perparvus* (adj. A). **extremely small**: *minimus* (adj. A).

**Smallness**: *parvitas* (s.f. III).

**smaragdinus** (adj. A): emerald-green, dark bluish-green.

**smeared**: *illinitus* (part. A).

**Smell, Scent, Odour**: *odor* (s.m. III. v), *olor* (s.m. III. v), *fetor* (s.m. III. v);

**frutex odorem gratum exhalens**, shrub a pleasing odour giving out. **smelling (of anything)**: *olens* (part. B), *olidus* (adj. A). **scented pleasantly, fragrant**: *suaveolens* (adj. B), *odorus* (adj. A), *odoratus* (adj. A), *fragrans* (part. B), *aromaticus* (adj. A); *flores die inodori noctu fragrantes*, flowers by day scentless, at night fragrant. **smelling unpleasantly, stinking**: *graveolens* (adj. B), *foetidus* (adj. A), *foetulentus* (adj. A), *putidus* (adj. A), *stercoreus* (adj. A). **smoke-grey**: *fumosus* (adj. A), *fumeus* (adj. A).

**smooth**: *laevis* (adj. B), *levis* (adj. B), *laevigatus* (part. A), *levigatus* (part. A).

**skinned**: *recutitus* (adj. A). **sky-blue**: *caelestis* (adj. B).

**snail-shaped**: *cochleatus* (adj. A).

**snake**: in *Gk. comp.*, *ophio-*; *ophioglossus*, snake-tongued, i.e. with a forked tongue; *ophiophyllus*, snake-leaved, i.e. with twisted or flexuous leaves. **snaky**: *serpentinus* (adj. A) q.v.; cf. FLEXUOSUS.

**Snout**: *rostrum* (s.n. II).

**Snow**: *nix* (s.f. III), *gen. sing. nivis*, *abl. sing. nive*. **Snow-patch**: *locus ubi nix longe perdurat*. **snow-white**: *nivalis* (adj. B), *niveus* (adj. A), *candidus* (adj. A). **snowy**, consisting of snow: *nivalis* (adj. B), *niveus* (adj. A), *nivösus* (adj. A); in *Gk. comp.*, *chion-*, *chiono-*.

**so**: *sic* (adv.) 'thus' with verbs, ita (adv.) 'thus' with adj., ergo (adv.) 'therefore, hence'. **so that**: *ut* (conj. with subjunctive).

**soaked**: *madefactus* (part. A), *madidus* (adj. A), *irriguus* (adj. A); cf. HUMECTATUS.

**Sobol**: *soboles* (s.f. III. vi), *acc. sing. sobolem*, *gen. sing. sobolis*, *abl. sing. sobole*, *nom. and acc. pl.*, *soboles*, *abl. pl. sobolibus*. The term *soboles*, referring to the underground creeping base of a stem, is synonymous with *caulis basi stoloniformis* of some authors. **sobolifer** (adj. A): *sobol-bearing*; cf. RUNNER.

**Society**: *societas* (s.f. III. ii), *gen. sing. societatis*.

**Sodium**: *sodium* (s.n. II), *gen. sing. sodii*.

**soft**: (to the touch) *mollis* (adj. B), *mitis* (adj. B), *lenis* (adj. B); (to the taste) *mitis* (adj. B); (in colour) *lenis* (adj. B); *aqua pluvialis*, rain (soft) water. **softly**: *molliter* (adv.), *leniter* (adv.).

**Soil**: *solum* (s.n. II), *acc. sing. solum*, *gen. sing. soli*; cf. HUMUS, TERRA.

**soiled**: *sordidus* (adj. A); cf. STAINED.

**soleaformis** (adj. B), *soleiformis* (adj. B): sandal-shaped, sole-shaped.

**solely**: *solum* (adv.), *tantum* (adv.).

**solemniter** (adv.): customarily.

**solferinus** (adj. A): solferino-purple (H.C.C. 26).

**solid**: *solidus* (adj. A); cf. FARTCUS.

**solidinervis** (adj. B), *solidinervius* (adj. A): with undivided nerves running from base to apex.

**solitarius** (adj. A): alone, by itself, solitary; see ONE, SINGULARIS, UNICUS.

**solitus** (part. A): usual, customary.

**solstitialis** (adj. B): pertaining to summer. **solubilis** (adj. B): which may be taken apart, coming apart, separating into pieces.

**Solum** (s.n. II): lowest part, bottom, floor, soil, earth; *solum natale*, habitat.

**solummodo** (adv.): merely.

**solus** (adj. A): alone, single, sole.

**Solution**: *solutio* (s.f. III. vi).

**solutus** (part. A): set free, not adherent, completely separate from adjacent parts, breaking up, disappearing (opp. of ADNATUS, etc.). 451

**Soma** (s.n. III. ix): in *Gk. comp.*, body; cf. CHROMOSOMA.

**somatic**; *somaticus* (adj. A): *cellulae somaticae*, somatic cells.

**some**: *aliquot* (num. indecl.); *aliqui*, *aliqua*, *aliquid* (adj.), *nom. pl. aliqui*, *aliquae*, *aliqua*; *nonnullus* (adj. A). **somehow**: *aliquam* (adv.). **sometimes**: *interdum* (adv.), *aliquando* (adv.), *nonnunquam* (adv.). **somewhat**: *aliquantum* (adv.) 'in some quantity', *aliquot* (adv.) 'in some numbers', *nonnihil* (adv.) 'not much'; cf. SLIGHTLY.

**Somnus** (s.m. II): sleep.

**soon**: *mox* (adv.), *jam* (adv.), *cito* (adv.).

**Soot**: *fuligo* (s.f. III. vi). **sooty**: *fuliginosus* (adj. A), *fuligineus* (adj. A).

**Soralium**: *soralium* (s.n. II).

**sordidus** (adj. A): dirty-looking, dingy, soiled.

**Soredie**: *soredium* (s.n. II), *nom. pl. soredia*; *thallus sorediis minutis crebris convexis rarius confluentibus*, thallus with soredia minute crowded convex rarely confluent.

**sorifer** (adj. A): sorus-bearing.

**Sorocarp**: *sorocarpium* (s.n. II), *abl. sing. sorocarpio*.

**Sorophore**: *sorophorum* (s.n. II), *abl. sing. sorophoro*.

**Sorus**: *sorus* (s.m. II), *nom. pl. sori*, *gen. pl. sororum*, *abl. pl. soris*; synonymous with *sporothecium*; *sori nudi*, *apice venarum simplicium*; *sori naked*, at the apex of simple veins; *sori numero et loco irregulares plerumque conferti seriemque nervo intermedio approximatam irregulariter formantes*, sori in numbers and position irregular, most of them crowded together and forming an irregular series close to the intermediate nerve; *sori uniseriati exacte inter marginem et costulam*

*intermedii*. sori in a single series exactly halfway between the margin and costula; *sori varii, nempe globosi, lineares, oblongi, indusiatii aut nudi, saepissime dorso venarum, interdum parenchymati insidentes*, sori various, namely globose, linear, or oblong, with an indusium or naked, most often at the back of the veins, sometimes situated on the parenchyma; *sori simplices pauci obliqui vel fere recti, in venulis superioribus insidentes et hanc ob causam a costa valde remoti et margini approximati*, sori simple few oblique or almost straight, on the upper veinlets situated and hence from the costa very remote and the margin approaching; *sori inter costam et marginem uniseriati denique confluentes et excepto angusto margine totam paginam inferiorem obtegentes*, sori between costa and margin in a single series at length confluent and except for a narrow margin the whole lower surface covering; *sori inframarginales, in dorso dentium vel in sinu dentium (aut dentis dorsum vel illius sinum occupantes)*, sori inframarginal, on the back of teeth or in the recess of teeth (the back of a tooth or its recess occupying); *sororum series segmentorum apicem haud attingentes*, series of sori the apex of the segments not reaching; *soris marginalibus linearibus*, with sori marginal linear.

-sorus: in *Gk. and L. comp.*, pertaining to the sori.

sour: *see BITTER*.

Source: *origo* (s.f. III. vi).

South: meridies (s.m. V), gen. sing. meridiei; ad meridem, to the south; versus meridiem et orientem a loco dicto, south-east of the place named. south, sonthern: meridionalis (adj. B), australis (adj. B); in *Gk. comp.*, noto-, in *L. comp.*, austro-.

Space of limited extent: spatium (s.n. II), abl. sing. spatio, nom. and acc. pl. spatia; *spatio centrali nullo*, with central space nil; cf. DISTANCE, INTERSTITIUM, INTERVAL. spaced: dispositus (part. A) 'distributed, arranged', dispersus (part. A) 'scattered'.

spadiceus (adj. A): date-coloured, a deep reddish-brown.

Spadix: spadix (s.m. or f. III. i), gen. sing. spadicis, abl. sing. spadice, nom. pl. spadices; lit. branch, esp. inflorescence of palm; *spadix spatha brevior, totus inclusus, sessilis, basi femineus, superne hermaphroditus, appendice erecta clavata*, spadix than the spathe shorter, all included, sessile, at the base female, above hermaphrodite, with appendage erect

club-shaped; *palma spadicibus inter frondes erumpentibus*, palm with spadices between the fronds breaking out, i.e. with interfoliar spadices; *flores monoici in distinctis spadicibus*, flowers monoecious on different spadices; *spadices sessiles vel pedunculati pluripedales, basi et ad ramos compressos spathis incompletis vaginati, interdum vaginas foliorum perforantes*, spadices sessile or pedunculate several feet long, at base and at the compressed branches by incomplete spathes sheathed, sometimes the sheaths of leaves perforating.

Span: spithama (s.f. I), nom. pl. spithamea. span-long: spithameus (adj. A).

span-, spano-: in *Gk. comp.*, few, scanty, scarce; *spanospermus*, few-seeded; *spananthus*, few-flowered; cf. OLIG-.

spargens (part. B): scattering, dispersing, spreading abroad; *fructibus odore spargentibus*, with fruits giving out a scent.

sparingly: parce (adv.).

sparsim: (adv.): scatteredly, sparsely.

sparsus (part. A): sparse, scattered. 481

spathaceus (adj. A): spathe-like, provided with a spathe.

Spatha: spatha (s.f. I), abl. sing. spatha, nom. pl. spathae, lit. 'a broad flat wooden or metal blade'. Applied to spathe of palms by Theophrastus and Pliny; *spatha erecta ovata viridis longitudinaliter albo-vittata marcescens, inferne convoluta, superne aperta*, spathe erect ovate green longitudinally white-banded withering without falling, below with margins overlapping, above open; *spathae duae, inferiore membranacea decidua inermi, superiore lignosa persistenti aculeata*, spathes 2, with the lower one membranous deciduous unarmed, the upper one woody persistent prickly. spatiformis (adj. B): spathe-like.

Spathilla: spathilla (s.f. I).

spathulatus (adj. A): spathulate, spatula-shaped, i.e. from a broad rounded upper part tapering gradually downwards into a stalk. spathul-: in *L. comp.*, spathulate; *spathulifolius* with spathulate leaves. 112

spatiosus (adj. A): of great extent, ample.

Spatium (s.n. II): space, distance, interval, extent; *axis inferne per spatia pollicaria radios emittens*, axis in lower part at inch-long intervals giving out rays.

spatulatus: *see SPATHULATUS*.

special: peculiaris (adj. B), proprius (adj. A), specialis (adj. B).

specialis (adj. B): particular, special, not general; *formae speciales*, special forms,

i.e. parasitic forms restricted to certain hosts despite lack of morphological differentiation.

Species: species (s.f. V), acc. sing. speciem, gen. sing. speciei, abl. sing. specie, nom. and acc. pl. species, gen. pl. specierum, dat. and abl. pl. speciebus; *species nova a specie praecedente bene distincta*, new species from the preceding species well distinct; *ex Haiti hanc speciem non vidi*, from Haiti this species I have not seen; *descriptio speciei novae*, description of a new species; *species omnes tropicae*, species all tropical; *icones specierum novarum vel minus cognitarum*, illustrations of new or little-known species; *species haec et sequentes inter se valde affines sunt*, this species and the following ones between themselves are very closely akin. specific: specificus (adj. A); differential specifica continent notas, quibus a speciebus congeneribus differt (Linnaeus, *Phil. bot.*, No. 256), the specific differential contains the distinctive features by which it differs from species of the same genus. specifically: specific (adv.); *planta certe specifice non distincta*, plant certainly not specifically distinct.

Specimen: specimen (s.n. III. vi), abl. sing. specimine, nom. pl. specimina, abl. pl. speciminibus; exemplum (s.n. II), abl. sing. exemplo, nom. pl. exempla, abl. pl. exemplis; *specimen originarium in herbario auctoris prope . . . collectum*, original specimen in the herbarium of the author near . . . collected; *specimina in herbariis asservata non raro alis speciebus commixta sunt*, specimens in herbaria preserved not rarely with other species are mixed; *in speciminibus cultis, in cultivated specimens; cum exemplariibus Europaeis ad amissim convenient*, with European specimens it agrees precisely; cf. EXSICCATA, HERBARIUM.

speciosus (adj. A): showy, splendid.

Speck: gutta (s.f. I).

spectans (part. B): looking towards, situated towards, lying towards; *flagellum anticum protinus, posticum retro spectans*, front flagellum forwards, back one backwards lying.

spectatus (part. A): beheld, seen, esteemed. speedily: cito (adv.) 'quickly', confestim (adv.) 'forthwith'.

Spelunca (s.f. I): cave.

-sperma (s.n. III. ix): in *Gk. comp.*, -seed; *see -SPERMUS*.

Spermagonium: *see SPERMOGONIUM*.

Spermatange: spermatangium (s.n. II), abl. sing. spermatangio, nom. pl. spermatangia, abl. pl. spermatangiis.

Spermatophore: spermatophorum (s.n. II).

Spermatum: spermatium (s.n. II).

Spermatocystidium: spermatocystidium (s.n. II).

Spermidium: spermidium (s.n. II).

Spermoderium: spermodermium (s.n. II).

Spermochidium: spermodochidium (s.n. II).

Spermochidium: spermodochidium (s.n. II).

Spermogonium: spermogonium (s.n. II).

Spermospore: spermospora (s.f. I).

-spermus (adj. A): in *Gk. comp.*, -seeded; *aulacospermus*, with furrowed seeds; *argyrospermus*, with silvery seeds; *baliospermus*, with golden seeds; *chrysospermus*, with seeds having a raised network on the surface; *erythrospermus*, with red seeds; *leucospermus*, with white seeds; *melanospermus*, with black seeds; *monospermus*, one-seeded; *oligospermus*, few-seeded; *pleiospermus*, many-seeded; *leiospermus*, smooth-seeded; *rhytidospermus*, with wrinkled seeds; *trachyspermus*, rough-seeded; *macrospermus*, large-seeded; *microspermus*, small-seeded; *pterospermus*, with winged seeds; *sphaerospermus*, with globose seeds.

spheclatus (adj. A): with brown or blackish speckling.

sphaericus (adj. A): globose, spherical. sphaero-: in *Gk. comp.*, globose, spherical; *sphaerocarpus*, with globose fruit; *sphaerocephalus*, with globose heads. 4

sphaeroideus (adj. A): globose with somewhat compressed or flattened poles. 23

Sphalma (s.n. III. ix): stumble, error, mistake; *sphalmate*, by mistake.

spen-, spheno-: in *Gk. comp.*, wedge-; *sphenobasis*, with wedge-shaped base; *sphenochilus*, with wedge-shaped lip; *sphenophyllus*, with wedge-shaped leaves; cf. CUNEATUS.

Spica (s.f. I): spike, q.v. spicatus (adj. A): spicate, bearing a spike, spicifer (adj. A): bearing a spike. spiciformis (adj. B): resembling a spike.

Spicilegium (s.n. II): a gleaning.

Spicula (s.f. I): spikelet, q.v.

spiculatus (adj. A): covered with fine points. 265

Spiculum (s.n. II): spicule.

Spike: spica (s.f. I), acc. sing. spicam, abl. sing. spica, nom. pl. spicae, acc. pl. spicas, abl. pl. spicis; *spica erecta densiflora cylindrica*, spike erect densely flowered cylindric; *spicae erectae, superiores approximatae, inferiores distantes, omnes densiflorae*, spikes erect, the upper close together, the lower remote,

all many-flowered; *verticillastri in spicas axillares vel terminales conferti*, verticillasters in spikes axillary or terminal crowded.

**Spikelet**: *spicula* (s.f. I), 'secondary spike, unit of the inflorescence in grasses', to be distinguished from *spiculum* (s.n. II) 'a little sharp point'; *spicula biflora*, spikelet 2-flowered; *spiculae biflorae*, *flore inferiore masculo vel neutrō*, *superiore hermaphrodito, nunc solitariae*, *nunc geminae vel plures congestae*, spikelets 2-flowered with lower flower male or neuter, upper one hermaphrodite, now solitary, now paired or several crowded together; *spiculae in quoque pari altera sessilis altera pedicellata*, spikelets in each pair one sessile the other pedicelled; *spiculae homogamiae masculae vel steriles lanceolatae 3 cm. longae acutae, spiculae fertiles oblongae fere teretes*, spikelets with one kind of flower (i.e. one-sexed) male or sterile lanceolate 3 cm. long, acute, spikelets fertile oblong almost terete.

**spindle-shaped**: *fusiformis* (adj. B). 27

**Spine**: *spina* (s.f. I), *abl. sing. spina, nom. pl. spinae, abl. pl. spinis*; *spinae validae pubescentes ad 2 cm. longae*, spines stout pubescent to 2 cm. long; *fruticuli spinis axillaribus vel nullis vel teneris brevibus vel validis lignosis ad 1 cm. longis, rectis vel recurvatis, saepe horizontaliter patentibus, initio puberulis mox glabris armati*, shrublets armed with axillary spines none or slender short or stout woody to 1 cm. long, straight or curved, often horizontally spreading at first puberulous soon glabrous; cf. **ACULEUS**. **spine-bearing**: *spinifer* (adj. A). **Spine-cell**: *spinula* (s.f. I). **spine-like**: *spiniformis* (adj. B). **spinescent**: *spinescens* (part. B). **Spinule**: *spinula* (s.f. I). **spinulose**: *spinulosus* (adj. A). **spiny**: *spinous* (adj. A), *spinosus* (adj. A). 261

**Spira** (s.f. I): coil, spiral.

**spiral**: *spiralis* (adj. B); cf. **CIRCI-NATUS**, **GYRATUS**, **HELIC-**, **STROMBULIFORMIS**. **Spiral-cells**: *cellulae* (s.f. pl. I) *spirales* (adj. B. pl.). **spirally**: *spiratim* (adv.), *spiraliter* (adv.), in cochleam, in spiram; *trichomata in cochleam torta*, trichomes into a spiral twisted; *trichomata in spiram laxam contorta*, trichomes into a loose spiral twisted. **spirally twisted**: *torsivus* (adj. A), etc.; cf. **SPIRALLY**. 14, 382, 416, 492

**Spirit**: *spiritus* (s.m. IV).

**spirostylis** (adj. B), **spirostylus** (adj. A): with spirally twisted style.

**spisse** (adv.): densely, compactly, closely. **spissescens** (part. B): becoming thick,

thickening. **spissus** (adj. A): dense, compact, close together.

**Spithama** (s.f. I): span, distance between tips of thumb and first finger when outstretched, 7 inches, approx. 19 cm. **spithameus** (adj. A): a span long or high. **splendens** (part. B): shining, gleaming, brilliant. 297

**Split**: *fissura* (s.f. I); cf. **RIMA**, **SCISSURA**. **split**: *fissus* (part. A), *fissilis* (adj. B); in *Gk. comp.*, *schizo-*, in *L. comp.*, *fissi-*; *schizophyllum*, *fissifolius*, with deeply divided leaves. **splitting**: *findens* (part. B), *secedens* (part. B). 194

**spod-**: in *Gk. comp.*, ash-grey-;

*spodochrous*, grey-coloured, ash-grey.

**Spongiosa** (s.f. I): a little sponge. Formerly used of the root-tip, the stigma and the caruncle when spongy.

**spongiosus** (adj. A): spongy, porous, soft and water-soaked, like a wet sponge; cf. **FUNGOSUS**. 319

**spontaneus** (adj. A): naturally growing wild (opp. **CULTUS**, **SATIVUS**).

**spoon-shaped**: *cochleariformis* (adj. B), *cochlearis* (adj. B).

**sporadic**: *sporadicus* (adj. A): see **HERE AND THERE**.

**Sporangium**: *sporangium* (s.n. II), *abl. sing. sporangio*, *nom. pl. sporangia*, *abl. pl. sporangiis*. **sporangium-bearing**: *sporangifer* (adj. A).

**Spore**: *spora* (s.f. I), *acc. sing. sporam*, *gen. sing. sporae*, *abl. sing. spora*, *nom. pl. sporae*, *acc. pl. sporas*, *gen. pl. sporarum*, *abl. pl. sporis*. The terms applied to leaf-shapes and to ornamentation of pollen (cf. **POLLEN**) are suitable for description of spores, with addition of *allantoideus* (sausage-shaped), *doliformis* (barrel-shaped), *lageniformis* (gourd-shaped, swollen at base narrowed rather abruptly into a long neck); *sporae oblongae utrinque obtusatae continuae dein 1-septatae tandem 3-septatae brunneae leviter fuligineae at non opacae raro constrictae 12-20 $\mu$  longae 5-6 $\mu$  latae*, spores oblong at both ends blunt continuous then 1-septate at length 3-septate brown lightly fuliginous but not opaque rarely constricted 12-20 $\mu$  long 5-6 $\mu$  broad; *sporae 30 $\mu$  in diametro triletae haud monoletae laeves*, spores 30 $\mu$  in diameter trilete never monolete; *sporae subglobosae leviter sex-angulatae nitentes carneae in cumulo*, spores subglobose lightly 6-angled shining flesh-colour in a heap; *sporae conglomeratae brunneae oblongae utrinque rotundatae uniseptatae constrictae 25  $\times$  14 $\mu$ , cellulis subaequalibus, episporio dense subtiliter verrucosopunctato*, spores collected into a ball

brown oblong at both ends (on both sides) rounded 1-septate constricted 25 by 14 $\mu$ , with cells almost equal, with the episporie densely finely verrucose-dotted; *sporis ovatis oblongis vel subglobosis apice non incrassatis medio leviter constrictis brunneis verruculosis 16-20  $\times$  20-30 $\mu$* , with spores ovate oblong or almost globose at the tip not thickened at the middle lightly constricted brown verruculose 16-20  $\times$  20-30 $\mu$ ; *sporis albis levibus vel valde aculeatis botuliformibus vel anguste oblongis vel ovoideis 1-guttatis haud amyloideis*, with spores white smooth or strongly spiny sausage-shaped or narrowly oblong or ovoid with 1 oil-drop not amyloid (i.e. not giving a blue reaction to iodine); see p. 352, Fig. 32.

**brown oblong** at both ends (on both sides) rounded 1-septate constricted 25 by 14 $\mu$ , with cells almost equal, with the episporie densely finely verrucose-dotted; *sporis ovatis oblongis vel subglobosis apice non incrassatis medio leviter constrictis brunneis verruculosis 16-20  $\times$  20-30 $\mu$* , with spores ovate oblong or almost globose at the tip not thickened at the middle lightly constricted brown verruculose 16-20  $\times$  20-30 $\mu$ ; *sporis albis levibus vel valde aculeatis botuliformibus vel anguste oblongis vel ovoideis 1-guttatis haud amyloideis*, with spores white smooth or strongly spiny sausage-shaped or narrowly oblong or ovoid with 1 oil-drop not amyloid (i.e. not giving a blue reaction to iodine); see p. 352, Fig. 32.

**spore-bearing**: *sporifer* (adj. A), *sporophorus* (adj. A). **-spored**: in *comp.*

-sporus (adj. A).

**Sporidiole**: *sporidiolum* (s.n. II).

**Sporidium**: *sporidium* (s.n. II).

**Sporocarp**: *sporocarpium* (s.n. II).

**Sporoclad**: *sporocladium* (s.n. II).

**Sporocyst**: *sporocysta* (s.f. I), *sporocysts* (s.f. III. vi).

**Sporodochidium**: *sporodochidium* (s.n. II).

**Sporodochium**: *sporodochium* (s.n. II).

**sporogenus** (adj. A): producing spores.

**Sporophore**: *sporophorum* (s.n. II).

**Sporophyllum**: *sporophydiun* (s.n. II), *abl. sing. sporophydiu*, *nom. pl. sporophydia*, *abl. pl. sporophydiis*; *sporophydia solitaria vel aggregata*, sporophydia solitary or clustered. Concerning this term, the **OOGONIUM**, q.v., of most writers on **Charophyta**, see H. Horn & Rantzen in *Bot. Notiser* 109: 215 (1956).

**Sporophyll**: *sporophyllum* (s.n. II).

**Sporostegium**: *sporostegium* (s.n. II), *abl. sing. sporostegio*, *nom. pl. sporostegia*, *abl. pl. sporostegii*.

**Sporothecium**: *sporothecium* (s.n. II); see **SORUS**.

**Spot**: *macula* (s.f. I) 'blotch', q.v., *punctum* (s.n. II) 'dot, point, prick', *gutta* (s.f. I) 'drop, speck', *spotless*: *immaculatus* (adj. A), *purus* (adj. A), *spotted*: *maculatus* (adj. A), *punctatus* (adj. A), *guttatus* (adj. A); in *Gk. comp.*, *balio-*, *sticto-*.

**Spray**: *aspergo* (s.f. III), *abl. sing. aspergine*.

**spreading**: (outstretched) *effusus* (part.

A), *expansus* (part. A), *patens* (part. B), *patulus* (adj. A); (extending) *extendens* (part. B). 428

**Spring** (season): *ver* (s.n. III. v), *gen. sing. veris*. **belonging to spring**: *vernalis* (adj. B), *vernus* (adj. A).

**Spring (water)**: *scaturigo* (s.f. III. vi), *fons* (s.m. III. ix). **belonging to springs**: *fontanus* (adj. A), *fontinalis* (adj. B), *scaturiginus* (adj. A).

**springing back**: *resiliens* (part. B). **springing out**: *exiliens* (part B).

**sprinkled**: *conspersus* (part. A), *adspersus* (part. A).

**sprouting again**: *repullulans* (part. B).

**spumeus** (adj. A): frothy, foaming. **spumosus** (adj. A): full of foam, frothy, frothlike.

**Spur**: *calcar* (s.n. III. x), *gen. sing. calcaris*, *abl. sing. calcari*, *nom. pl. calcaria*, *abl. pl. calcaribus*; *calcar leviter incurvatum cylindricum viride apice leviter angustatum 5 mm. longum 1 mm. diametro*, spur slightly incurved cylindric green at the tip slightly narrowed 5 mm. long 1 mm. in diameter; *labellum ante orifice calcaris callosum*, lip in front of opening of spur callose; *labellum calcari ellipsoideo viridi apice rotundato intus prope ostium pilis patentibus instructo 3 mm. long*, lip with spur ellipsoid green at the tip rounded on the inside near the mouth with spreading hairs furnished 3 mm. long. **spur-like**: *calcariformis* (adj. B). **spurred**: *calcaratus* (adj. A); cf. **-CERAS**.

**spurious** (adj. A): *factus* (part. A), *spurius* (adj. A); cf. **FALSE**. **spuriously**: *spurie* (adv.).

**squalidus** (adj. A): dirty, neglected, squalid.

**Squama** (s.f. I): scale. **squamatus** (adj. A): furnished with scales. **Squamella** (s.f. I), **squamellula** (s.f. I): a little scale, lode-like (*in Gramineae*), subdivision of papus (*in Compositae*). **squamiformis** (adj. B): shaped like a scale. **squamous** (adj. A): scaly, covered with coarse scales. **Squamula** (s.f. I): lode-like in grasses, small lobe of thallus in lichens. **squamulosus** (adj. A): minutely scaly, covered with small scales. 497

**square**: *quadratus* (adj. A).

**squarrosus** (adj. A): squarrose, i.e. rough with scales, tips of bracts, etc., projecting outwards usually at about 90°. 495

**stabilis** (adj. B): firm, steadfast, stable.

**stachy-**, **stachyo-**, **-stachys**, **-stachyus**: in *Gk. comp.*, relating to a spike; *nom. sing. stachys*, *acc. sing. stachyn*, *gen. sing. stachyis*, *abl. sing. stachye*, *nom. and acc. pl. stachyes*, *gen. pl. stachyum*, *dat. and abl. pl. stachyibus*; *gen. sing. of generic name Stachys* (s.f.) is *Stachydis*, hence the epithet *stachydisfolius*, wound-wort-leaved; *barystachys*, with a heavy spike; *leptostachys*, *leptostachyus*, with a slender spike; *macrostachys*, *macrostachyus*, with a large spike;

*polystachyus*, with many spikes; *stachyurus*, with a tail-like pendulous spike.  
*stagnalis* (adj. B), *stagnatilis* (adj. B): growing in standing water, belonging to ponds or pools.

*stagnant*: *stagnans* (part. B), *iners* (adj. B).

*Stagnum* (s.n. II): a piece of standing water, a pool, pond or swamp.

*Stain*: *labes* (s.f. III), *abl. sing. labe*.  
*stained*: (by dyeing) *coloratus* (part. A), *fucatus* (part. A), *tinctus* (part. A); (by soiling) *foedatus* (part. A), *inquinatus* (part. A).

*Stalk*: (of leaf) *petiolus* (s.m. II); (of frond) *stipes* (s.m. III. ii); (of inflorescence) *pedunculus* (s.m. II); (of flower or fruit) *pedicellus* (s.m. II); (of moss capsule) *seta* (s.f. I); (of agarics, etc.) *stipes* (s.m. III. ii).

*stalkless*: *apodus* (adj. A), *sessilis* (adj. B).

*Stamen*: *stamen* (s.n. III. vi), *acc. sing. stamen*, *gen. sing. staminis*, *dat. sing. stamini*, *abl. sing. stamine*, *nom. and acc. pl. stamina*, *gen. pl. staminum*, *dat. and abl. pl. staminibus*; *stamen unicum*, *stamen one*; *stamina tot quot lobi corollae et tis alterna, apicem versus tubi inserta e fauce emergentia*, stamens as many as the lobes of the corolla and alternate with these, towards the apex of the tube inserted from the throat emerging; *stamina libera vel basi tantum vel in tubum alte connata*, stamens free or at base alone or into a tube high united; *stamina exserta, basi corollae affixa, filamentis elongatis*, stamens exerted, to the base of the corolla attached, with filaments elongated; *stamina inclusa, medio vel supra medium corollae inserta*, stamens included, at the middle or above the middle of the corolla inserted; *petalis oblongis stamena duplo superantibus*, with petals oblong twice as long as the stamens; *corolla intus ad basin staminum partium liberarum barbata*, corolla inside at the base of the free parts of the stamens bearded; *staminibus perigonium paulo usque plus sesqui superantibus*, with stamens the perigon by a little up to by  $1\frac{1}{2}$  times overtopping; *staminibus inclusis, quam petala brevioribus*, with stamens included, shorter than the petals. *-stamened*: in *Gk. comp.*, -*andrus*, *-stemon*, in *L. comp.*, -*stamineus*.

*staminalis* (adj. B), *staminaris* (adj. B), *staminealis* (adj. B), *stamineus* (adj. A): relating to stamens, staminal. *staminatus* (adj. A): provided with stamens (used of wholly male flowers on monoecious or dioecious plants). *staminifer* (adj. A): stamen-bearing.

*Staminode*: *staminodium* (s.n. II), *abl. sing. staminodio*, *nom. pl. staminodia*, *abl. pl. staminodiis*; *stamina 4, quinto postico ad staminodium antherum reducto, rarius 5 perfecta*, stamens 4, with the fifth posticus one to an antherless staminode reduced, more rarely 5 perfect; *staminodium ad apicem tubi squamiforme suborbiculare vel latus quam longum integrum vel retusum glabrum*, staminode at the top of the tube scale-like almost orbicular or broader than long entire or retuse glabrous; *staminodia tot quot stamina et tis in eadem serie alterna petaloidea dentata vel lacera*, staminodes as many as stamens and with those in the same series alternate petaloid dentate or lacerate; *staminodia acuminata staminibus alterna et cum tis tubum connata*, staminodes acuminate alternate with the stamens and with these at base into a tube united.

*staminosus* (adj. A): with very prominent stamens.

*Standard petal*: *vexillum* (s.n. II), *petalam* (s.n. II) *posterior magnum*; *vexillum late obovatum vel fere orbiculare c. 3 cm. longum 2.5 cm. latum, marginem versus pallide purpureum, medium versus violaceum, in medio ipso lacteum maculis purpureis notatum*, standard broadly obovate or almost orbicular about 3 cm. long 2.5 cm. broad, towards the margin pale purple, towards the middle violet, in the middle itself milk-white with purple spots marked; *corolla flava vexillo orbiculari vel oblongo, sursum curvato, basim versus cuneata vel in ungue angustum diminuato*, corolla yellow with standard orbicular or oblong, above curved, towards the base cuneate or into a narrow claw diminished.

*standing out*: *extans* (part. B), *prominens* (part. B); *folio ad angulum 50° a caule exstante*, with leaf at an angle of 50° from the stem standing out.

*stans* (part. B): standing upright.

*Star*: *stella* (s.f. I); *ad instar stellae*, in the form of a star, like a star; cf. *STELLATIM*.

*Star*: *amyllum* (s.n. II), *gen. sing. amily*; *cellulae amylo impletiae*, cells filled with starch, *starch-like*: *amyloideus* (adj. A). *starchy*: *amylaceus* (adj. A).

*Starry*: *stellatus* (adj. A), *q.v.*

*State* *status* (s.m. IV), *abl. sing. statu*; *in statu erratico*, in the mobile state; *in statu juvenili*, in the young state; *in statu vivo*, in the living state; *in statu sicco*, in the dried state; *in statu maturo*, in the mature state.

*stated*: *dictus* (part. A).  
*statim* (adv.): at once, immediately.

*stationary*: *sedentarius* (adj. A), *immobilis* (adj. B); cf. *QUIETUS*, *STILL*.

*Statura* (s.f. I): *size, stature*.

*Stauros*: *stauros* (s.m. II), *abl. sing. stauro*; *valvae stauro praeditae*, valves with a stauros provided.

*steel-grey*: *chalybeus* (adj. A).

*-stela* (s.f. I), *-stele* (s.f. I): in *Gk. comp.*, *column*; *gen. sing. stelae*; used in names of *Orchidaceae*, e.g. *Platystele*, *Rhyncostele*, *Thecostele*.

*Stella* (s.f. I): *star, q.v. stellaris*: see *STELLATUS*. *stellatum* (adv.): *ad instar stellae*: star-wise. *stellato-pilosus* (adj. A): having stellate hairs. *stellatus* (adj. A), *stellaris* (adj. B): stellate, starry, i.e. with narrow divisions radiating from a centre like the rays of a star; *folia pilis stellatis adspersus*, leaves with stellate hairs sprinkled; cf. *ASTEROTRICHUS*. *stellinervis* (adj. B): stellately nerved. 234, 477

*Stellula*: *stellula* (s.f. I).

*Stem*: *caulis* (s.m. III. vii), *abl. sing. caule*, *nom. and acc. pl. caules*, *abl. pl. caulinibus*; *caulis florifer singulus 10 cm. altus erectus vel ascendens viridis vel ruber monophyllus*, flowering stem single 10 cm. high erect or ascending green or red one-leaved; *herba caule 10 cm. alto erecto vel ascendentis viridi vel rubro inferne foliato superne nudo*, herb with stem 10 cm. high erect or ascending green or red below leafy above naked; *caules plures sinistrorum volubiles graciles glabri aculeis armatis viridis vel rubris*, stems several to the left twining slender glabrous with prickles armed green or red; *frutex alte scandens caulinibus gracilibus glabris aculeis armatis viridis vel rubris*, shrub high climbing with stems slender glabrous with prickles armed green or red. Cf. *CULM*. stem, pertaining to the: *caulinus* (adj. A). *stem-clasping*: *amplexicaulis* (adj. B). *stemless*: *acaulis* (adj. B). *-stemmed*: in *Gk. and L. comp.*, *-caulis* (adj. B); *erythrocaulis*, *rubri-caulis*, red-stemmed. 441

*-stema* (s.n. III. ix): in *Gk. comp.*, *garland, wreath*. Not to be confused with *stema* (s.n. III. ix) *penis, stamen*.

*-stemon* (s.m. III): in *Gk. comp.*, *-stamen*; *callistemon*, with beautiful stamens; *platystemon*, with broad stamens; cf. *STAMENED*.

*Steppe*: *steppa* (s.f. I).

*stercorarius* (adj. A): pertaining to or growing on dung. *stercoreus* (adj. A): dungy, stinking. *Stercus* (s.n. III): dung; see *DUNG*, *FAECES*.

*Stereid*: *stereida* (s.f. I), *nom. pl. stereidae*, *gen. pl. stereidarum*, *abl. pl. stereidis*;

*stratis pluribus stereidarum ventralium et dorsalium*, with several layers of ventral and dorsal stereids.

*Sterigma*: *sterigma* (s.n. III. xi), *abl. sing. sterigmate*, *nom. pl. sterigmata*, *abl. pl. sterigmatibus*.

*sterile*: *sterilis* (adj. B). *Sterility*: *sterilitas* (s.f. III. ii). *sterilized*: *sterilifatus* (adj. A), *sterilisatus* (adj. A).

*Stichid*: *stichidium* (s.n. II).

*-stichus*: in *Gk. comp.*, in a row or line; *distichus*, in two rows; *hexastichus*, in six rows, *polystichus*, in many rows; see *-FARIUS*, *ROW*.

*sticky*: *glutinosus* (adj. A), *viscidus* (adj. A); *viscosus* (adj. A).

*stict-*, *sticto-*: in *Gk. comp.*, spotted, dotted; *stictocarpus*, with spotted fruit. *stictus* (adj. A): dotted.

*stiff*: *rigidus* (adj. A), *rigens* (part. B). *becoming stiff*: *rigescens* (part. B).

*Stigma*: *stigma* (s.n. III. xi), *gen. sing. stigmatis*, *abl. sing. stigmata*, *nom. pl. stigmata*, *gen. pl. stigmatum*, *abl. pl. stigmatibus*. The forms assumed by this organ are described as follows: *stigma indivisum parvum punctiforme*, stigma undivided small reduced to a mere point; *stigma dilatatum et obsoletum trilobum interdum excavatum viride vel album*, stigma broadened and faintly three-lobed sometimes hollowed out green or white; *stigma simplex sed varia formis ludens, discoideum maximum radiatum quadrilobatum, perigonii fauces claudens, vel hemisphaericum vel conicum vel globosum*, stigma simple but making play with various forms, disc-like most large radiating four-lobed, the mouth of the perigon closing, or hemispherical or conical or globose; *stigma terminale brevissime bilobum*, stigma terminal very shortly two-lobed; *stigma lineare decurrent 2 mm. longum*, stigma linear decurrent 2 mm. long; *stigma infra apicem stylis laterale excavatum ciliatum*, stigma below apex of style lateral hollowed out ciliated; *stigma aequaliter bilamellatum, lamellis (vel stylis lobis) ovatis vel oblongis 2-4 mm. longis intus stigmatosis*, stigma evenly two-lamellate, with the lamellae (or lobes of the style) ovate or oblong 2-4 mm. long on the inside stigmatous; *stigma capitatum rubrum vel purpureum c. 1 mm. diametro*, stigma capitata red or purple about 1 mm. in diameter; *stigma penicillato-multifidum*, stigma divided into many parts in the form of a brush; *stylus clavatus*, *stigmata terminali vel sublaterali vel prope apicem laterali*, style club-shaped with stigma terminal

or almost lateral or near the apex lateral; *stylus filiformis, stigmate subgloboso integro 3 mm. lato vel didymo vel bigloboso*, style thread-like, with stigma almost spherical entire 3 mm. broad or deeply two-lobed or forming two spheres; *stylus glaber in stigmata duo linearia 2 mm. longa extens*, style glabrous into stigmas two linear 2 mm. long running out; *stylus nunc indivisus, stigmate rotundato in discum expanso, nunc apice in lobos 2 vel 3 brevissimos intus stigmatosos divisus*, style sometimes undivided, with stigma rounded into a disc expanded, sometimes at the tip into lobes 2 or 3 very short on the inside stigmatic divided; *stylus apex supra annulum stigmatosum productus*, apex of style above the stigmatic ring drawn out; *stylus apice indusio cupulato stigma includenti instructus*, style at the tip with cup-like indusium enclosing the stigma provided; *stylus elongatus bifidus, ramis breviter vel profunde bifidus, stigmatibus capitatis vel clavatis*, style elongated bifid, with branches shortly or deeply bifid, with the stigmas capitata or clavata; *stigmata terminalia parva punctiformia vel per stylis lobos decurrentia*, stigmas terminal small point-like or along the lobes of style running downwards; *stigmata basin antherarum haud attingentia*, stigmas the base of the anthers not reaching; *stigmata aurantiaca integra antheros multo superantia*, stigmas orange entire the anthers by much overtopping; *stigmata placentarum numero in capitulum connata*, stigmas the same number as the placentas into a small head united; *stigmata unum ad tria indivisa purpurea plumosa pilis simplicibus vel ramosissima*, stigmas one to three undivided plumose with hairs simple or branched; *stigmata radii e corolla exserta, disci inclusa*, stigmas of the ray-area from the corolla exserted, of the disc included; *stigmata ramosa ramis capillaceis*, stigmas branched with branches hair-like; Gk. neuter words ending in *-ma*, such as *lemma, parenchyma, protonema, rhizoma, stoma, sistema* and *trichoma*, together with generic names of Gk. origin formed from *-calymma, -derma, -desma, -nema, -paegma, -phragma, -soma, -sperma, -stelma, -stemma, -stigma* and *-stoma*, are treated like *stigma* above. The term *stigma* is also used for 'eye-spot'. *stigmaticus* (adj. A): stigmatic, i.e. provided with a papillose or sticky pollen-receptive surface, relating to a stigma. *stigmatifer* (adj. A): stigma-bearing. *stigmatiformis* (adj. B), stig-

*matoideus* (adj. A): shaped like or having the appearance of a stigma. *stigmatosus* (adj. A): having especially well-developed or conspicuous stigmas. *Stigmatocyst*: *stigmatocysta* (s.f. I). *Stigmatopod*: *stigmatopodium* (s.n. II). *stilbeus* (adj. A), *stilbiformis* (adj. A), *stilboideus* (adj. A): having a long stalk of hyphae and a head of spores, as in *Stilbaceae*. *still*: quietus (adj. A), *tranquillus* (adj. A); *in aquis tranquillis*, in still waters. *stilt-like*: *gralliformis* (adj. B), q.v.; *BUTTRESS*. *stimulans* (part. B): stinging. *stimulosus* (adj. A): well provided with stings; cf. *URENS*. *Stimulus* (s.m. II): sting. *Sting*: (organ) *stimulus* (s.m. II), (wound) *ictus* (s.m. IV). *stinging*: *urens* (part. B). *stinking*: foetens (adj. B), *foetidus* (adj. A), *foetulentus* (adj. A), *nauseosus* (adj. A) 'sickening', *putidus* (adj. A) 'rotten', *stercoreus* (adj. A) 'dungy'; *herba odore alliaceo etiam in sicco valde foetens*, herb with garlic odour even in a dry state strongly smelling. *stipatus* (part. A): surrounded, crowded. *Stipe*: *stipes* (s.m. III. ii), gen. sing. *stipitis*, abl. sing. *stipite*, nom. pl. *stipites*, gen. pl. *stipitum*, abl. pl. *stipitibus*, lit. 'log, stock, trunk'; *stipes centralis raro excentricus rectus aut incurvus cartilagineus solidus basi leviter attenuatus glaber, in specimenibus siccis fuscescens*, stipe (stalk, stem) central rarely excentric straight or incurved cartilaginous solid at base slightly attenuate glabrous, in dried specimens becoming fuscous; *stipes nigricans basi velo residuo caeterum nudus, siccitate tenuissime striatus, longitudo inter 2 et 5 cm. varians, in procerioribus 0.5 mm. crassus, fragilis intus fistulosus et succo gelatinoso repletus sursum incrassatus*, stipe blackish at base with remains of the velum for the rest naked, in a dried state thinly striate, in length between 2 and 5 cm. varying, in the taller specimens 0.5 mm. thick, fragile inside fistular and with a gelatinous juice filled above thickened; *stipes omnino lateralis verticalis 10 cm. longus valde inaequalis, tuberculis nempe variae magnitudinis exasperatus, caeterum laevigatus et ut pileus crusta laccata obductus, basi saepius dilatata scutatim ligno aut cortici affixus, intus irregulariter lacunosus vel spongiosus*, stipe completely lateral vertical 10 cm. long very unequal in thickness, with tubercles certainly of varied size rough, for the rest

smooth and like the pileus with a varnished crust covered over, by the base most often swollen in a shield-like manner to wood or bark attached, inside irregularly perforated or spongy; *stipite centrali vel excentrico, sed haud omnino laterali, recto cartilagineo fistuloso, haud solido, glabro 10 cm. longo brunneo nudo laevi, haud viscidio, aequali vel apice dilatato*, with stipe central or excentric, but never completely lateral, straight cartilaginous fistular, never solid, glabrous 10 cm. long brown naked smooth, never viscid, of even thickness or at the tip expanded; *receptaculum absque stipite distincto, receptacle (fruit-body) without a distinct stipe; stipite 10-20 cm. longo stramineo haud purpureo sulcato, paleis brunneis integris iis rhizomatis similibus basi vestito, caeterum nudo, with the stipe 10-20 cm. long straw-coloured never purple grooved, with scales brown entire similar to those of rhizome at base clothed, otherwise naked; clavula in stipitem albidum pubescens rubris, rootstock with stolons pubescent red; cf. FLAGELLUM, RHIZOMA, RUNNER, SARMENTUM.* *stolon*: *stolo* (s.m. III. vi), gen. sing. *stolonis*, abl. sing. *stolone*, nom. pl. *stolones*, abl. pl. *stolonibus*; *caudex emittens stolones pubescentes rubros vel virides ad 10 cm. longos et 5 mm. crassos*, rootstock putting forth stolons (runners) pubescent red or green to 10 cm. long and 5 mm. thick; *caudex stolonibus pubescentibus rubris*, rootstock with stolons pubescent red; cf. STOLONIFORM, STOLONIFORMIS. *stoloniformis* (adj. B): *stoloniform*, resembling a stolon; *caulis pars basalis stoloniformis*, of the stem the basal part stoloniform. *stoloniformiter* (adv.) in a stoloniform manner, like a stolon. *Stoma*: *stoma* (s.n. III. xi), abl. sing. *stomatibus*; *stomata elliptica, cellulis epidermidis minoria vel easdem superficie fere aequantia vel majora, propatulo angusto, cellulis accessoriis magnis*, stomata elliptic, smaller than or almost the same on the surface as or larger than the cells of the epidermis, with the stomatal opening narrow, with the guard cells large; cf. PROPATULUM. *stomata-bearing*: *stomatophorus* (adj. A). *Stone* (of a fruit): *putamen* (s.n. III); *putamen compressum 7 mm. longum 4 mm. latum 2 mm. crassum rugulosum, a ventre sulco lato profundo in longitudinem exaratum*, stone compressed 7 mm. long 4 mm. wide 2 mm. thick somewhat rugose, on the ventral side by a broad deep groove lengthwise furrowed; see ENDOCARP. *Stone (rock)*: *saxum* (s.n. II), abl. sing. *saxo*, abl. pl. *saxis*; *lapis* (s.m. III. ii), abl. sing. *lapide*, abl. pl. *lapidibus*. *stone-hard*: *lapideus* (adj. A). *stony*: *lapidosus* (adj. A), *saxosus* (adj. A). *Stony Ground or Place*: *saxa* (s.n. II. pl.), abl. pl. *saxis*; *saxosa* (s.n. II. pl.), abl. pl. *saxosis*.

Stopper: obturamentum (s.n. II).  
Storage Region: regio (s.f. III. vi) penaria.  
stored: conditus (part. A).  
stout: crassus (adj. A) 'thick', validus (adj. A) 'strong'.  
straggling: effusus (part. A).  
straight: rectus (adj. A), strictus (part. A).  
straight-nerved: rectinervis (adj. B), rectinervius (adj. A). straightforward: protinus (adv.), 350, 388, 389

Strait: fretum (s.n. II), fretus (s.m. IV); frutices ad *Fretum Magellanicum* crescentes, shrubs at the Straits of Magellan growing.

stramineus (adj. A): straw-yellow (H.C.C. 60.4).

Strand (shore): littus (s.n. III). Strand (thread): filum (s.n. II).

strange: peregrinus (adj. A) 'foreign', mirus (adj. A) 'wonderful', insuetus (adj. A) 'unusual'.

strangulatus (part. A): throttled, i.e. narrowed and then widened again.

strap-shaped: ligulatus (adj. A), loratus (adj. A), loriformis (adj. B); in Gk. comp. himanto-; cf. BAND-SHAPED.

stratosus (adj. A): in distinct layers. Stratum (s.n. II): layer of tissue.

straw-coloured: stramineus (adj. A). Stream: rivulus (s.m. II).

Stria (s.f. I): stria, fine linear marking, line, streak, or groove; nom. pl. striae, abl. pl. stris; stris transversis et longitudinalibus parallelis vel radiantibus subtilibus vel distinctis, 12-14 in 10 $\mu$ , with striae transverse and longitudinal parallel or radiating faint or distinct, 12-14 within a length of 10  $\mu$ ; stris raphe non attingentibus, with striae not reaching the raphe. striatus (adj. A): striate, i.e. marked with striae. 254

Strictura (s.f. I): contraction, constriction. strictus (part. A): drawn close together, very upright, very straight. 389

Striga (s.f. I): striga, a straight rigid close-pressed rather short bristle-like hair.

strigosus (adj. A): covered with strigae. Striola (s.f. I): a very fine linear marking; see STRIA. striolatus (adj. A): striolate, i.e. with fine linear markings.

striped: fasciatus (adj. A), grammatus (adj. A) 'with raised lines', vittatus (adj. A) 'longitudinally striped'; cf. FASCIATUS.

stripped: denudatus (part. A).

strobilaceus (adj. A), strobiliformis (adj. B), strobilinus (adj. A): strobilaceous, i.e.

formed of overlapping scales like a pine-cone; paniculae femaleae e spicis paucis pendulis strobiliformibus bracteis plurifariam laxe imbricatis membranaceis, panicles female from (made from) spikes few pendulous cone-like with bracts in

many rows loosely overlapping membranous. Strobilus (s.m. II): cone; strobilus ovoideus vel globosus lignosus, squamis valde incrassatis post anthesis auctis persistentibus, cone ovoid or globose woody, with scales strongly thickened after anthesis enlarged persistent; strobili maturi caerulei vel rubri  $\frac{1}{2}$ -1 poll. diametro, mature cones blue or red  $\frac{1}{2}$ -1 in. in diameter.

Stroma: stroma (s.n. III), abl. sing. stromate, nom. pl. stromata, abl. pl. stromatibus; stroma parcum peridermio tecum crustaceum effusum undulatum nigrum, stroma scanty by the peridermium covered crustaceous stretched out undulate black; stromata gregaria erumpentia, peridermio laciniatim rupto cincta, pulvinata, stromata in groups bursting the surface, by the periderm laciniately broken surrounded, cushion-like.

strombuliformis (adj. B): twisted in a long spire. 13

strong: validus (adj. A), fortis (adj. B). strongly: valde (adv.).

strong-smelling: graveolens (adj. B); cf. STINKING.

Strophiole: strophiolum (s.n. II), abl. sing. strophiole, nom. pl. strophiola, abl. pl. strophiolis.

Structura (s.f. I): structure, organization; cf. COMPAGES, FABRICA.

Struma (s.f. I): cushion-like swelling or tumour. strumosus (adj. A): provided with a swelling.

Strut: tigillum (s.n. II), q.v.

stuffed: farcitus (part. A), farctilis (adj. B). Used when interior is filled with substance of very different texture from the exterior; cf. FILLED.

stuppeus (adj. A), stupposus (adj. A): covered with matted tow-like hairs.

stylaris (adj. B): relating to the style. stylatus (adj. A): provided with a style, usually a conspicuous one; cf. STYLOSUS.

Style: stylus (s.m. II), gen. sing. styli, abl. sing. stylo, nom. pl. styli, abl. pl. stylis; stylus rectus nunc brevis vel brevissimus nunc filiformis elongatus, in ovario uniloculari saepius excentricus mox lateralis in ovario biloculari centralis, stigma parvo capitato, style straight sometimes short or very short sometimes thread-like elongated, on a one-chambered ovary often off the centre and soon lateral, on a two-chambered ovary central, with the stigma small capitate; stylus clavatus inferne glaber superne pubescens, style club-shaped below glabrous above pubescent; stylus exsertus curvatus, cum stigmate ad 2 cm. longus, ad 2 mm. latus, style exserted

curved, including the stigma to 2 cm. long, 2 mm. broad; ovarium in stylum glabrum circiter 1 mm. longum transiens, ovary into a style glabrous about 1 mm. long passing; stylus supra ovarium abrupte inflexus inferne glaber superne plus minus longitudinaliter barbatus, intra rostrum carinae incrassatus et cum eo tortus, stigma obliquum, style above the ovary abruptly bent inwards below glabrous above more or less longitudinally bearded, within the beak of the keel thickened and together with this twisted, with stigma oblique; stylus staminibus duplo brevior, style than the stamens twice shorter (i.e. half as long); ovarium stylo recto haud curvato albido vel rubro pubescens 3 cm. longo, ovary with style straight not curved whitish or red pubescent 3 cm. long; stylus a basi usque ad medium connati apice liberi divaricati hirsuti ad 4 cm. longi, styles from base up to the middle united at the tip free extremely divergent hairy up to 4 cm. long; stylus rigiduli filiformes albidi, senescentes inferne violacei, ab apice usque ad medium vel etiam usque sere ad basim pubescentes non hispidae, style somewhat rigid thread-like whitish, with age in the lower part violet, from the tip to the middle or even almost to the base pubescent not hispid; discus epigynus crassus stylis basin cingens, disc epigynous thick the base of the style surrounding; stylus purpurascentes antheras superantes vel staminibus aequilongi, apice stigmatoso unilaterali 3 mm. longo distincte falcato, styles purplish the anthers over-topping or as long as the stamens, with the one-sided 3 mm. long stigmatic tip distinctly falcate.

Stylium: stylidium (s.n. II).

Styliuctus (s.m. III): stylar canal.

styliifer (adj. A): style-bearing. styliformis (adj. B): like a style. stylus (adj. A): belonging to the style.

Styliodium: stylodium (s.n. II).

Stylogonidium: stylogonidium (s.n. II).

Stylopod: stylopodium (s.n. II).

Stylostegium: stylostegium (s.n. II).

stylosus: (adj. A): having a conspicuous or persistent style.

Stylus (s.m. II): style, q.v.

suaveolens (adj. B): fragrant, smelling sweetly; cf. ODOUR.

suavis (adj. B): sweet, pleasant, delightful.

sub (prep.): used with abl. or acc. to indicate position (object under which a thing is situated or extends) or time (at which, immediately before or immediately after an action takes place); with abl. under, below, near (indicating object under,

etc., which thing is situated), during, within, at (indicating time when action takes place); with acc. under, below, towards (indicating object under which thing extends, the verb being usually one of motion), shortly before, up to, until or immediately after, just after (indicating a close approximation in time); sub *lente valido*, under a strong lens; sub *microscopio*, under the microscope; sub *hoc nomine*, under this name; sub *anthesi*, at anthesis.

sub-: in L. comp., somewhat, not completely, a little. Before words beginning with *m*, *sub-* becomes *sum-*; before *r* it becomes *sur-*; *subacutus*, somewhat acute; *subalbidus*, somewhat whitish; *subalpinus*, subalpine, growing below the alpine region marked by the timber line; *sub-bilocularis*, almost bilocular, the partition not complete; *subcordatus*, with rounded basal lobes separated by a shallow notch; *subglobosus*, almost spherical; *subnudus*, almost naked. The meaning of the numerous analogous compounds, such as *subacute*, *subaequalis*, *subalternifolius*, etc., should be self-evident, the original meaning of the adjective being lessened in force by the addition of *sub* meaning 'almost' or 'somewhat'. 111, 167, 227

subductus (part. A): drawn from below, pulled up, dredged.

Suber (s.n. III. v): cork. subereus (adj. A), suberosus (adj. A): corky. 317

sub-erosus (adj. A): somewhat erose, slightly gnawed in appearance.

Subfamily: subfamilia (s.f. I), gen. sing. subfamiliae; cf. FAMILY.

Subgenus: subgenus (s.n. III. iv), gen. sing. subgeneris; cf. GENUS.

Subicle: subiculum (s.n. II), abl. sing. subiculus; subiculum tomentosum extensum e fibrillis ramosissimis flexuosis intertextis constans, subiculum (mycelium under fruit-body) tomentosum outspread composed from fibrils (hyphae) much branched flexuous interwoven.

subiens (part. B): submitting to, undergoing.

subinde (adv.): immediately after.

subito (adv.): suddenly, unexpectedly.

subject (part. A): placed below, lying beneath.

submarinus (adj. A): under the sea.

submersus (part. A): submerged, growing under water; opposite of *emersus*; caules plantae submersae 15-20 cm. longi, ei plantae emersae 5-10 cm. longi, stems of submerged plant 15-20 cm. long, those of emerged plant 5-10 cm. long. 392

Subsection: *subsectio* (s.f. III. vi), *gen. sing.* *subsectionis*; cf. SECTION.  
 Subseries: *subseries* (s.f. V), *gen. sing. sub-*  
*seriei*; cf. SERIES.  
 subsidiarius (adj. A): subsidiary.  
 Subspecies: *subspecies* (s.f. V), *gen. sing.* *subspeciei*; cf. SPECIES.  
 Subspecioid: *subspecioides* (s.m. III), *gen. sing.* *subspecioidis*, *nom. pl.* *subspecioides*, *abl. pl.* *subspecioidibus*.  
 Substance: *substantia* (s.f. I), *abl. sing.* *substantia*; *contextus* (s.m. IV), *abl. sing.* *contextu*; *caro* (s.f. III. vi), *abl. sing. carne*, *lit.* 'flesh'; *substantia pilei tenuis candida, e filamentis ramosis intricatis septatis in tramat similarem descendibus composita*, substance of the pileus thin pure white, from filaments branched entangled septate into the similar trama descending composed; *contextus pilei suberosus colore flavo insignis*, context (substance of hyphal mass) of the pileus corky by its yellow colour remarkable; *species contextu intense colorato distincta*, species by the deeply coloured context distinct.  
 substituted: *succedaneus* (adj. A), substitutus (part. A), surrogatus (part. A).  
 Substratum: *substratum* (s.n. II), *abl. sing.* *substrato*.  
 subtended: *subtentus* (part. A).  
 subter (adv.): below, beneath underneath, in a lower place. *subter* (prep. with acc. and abl.): below, beneath, underneath, under.  
 subterraneus (adj. A): underground, in the soil (*opp. of SUPRATERRANEUS*); see EPIGAEUS, HYPOGAEUS. 470  
 suhtilis (adj. B): fine, precise, delicate. subtiliter (adv.): finely, minutely.  
 subtracted: *demptus* (part. A).  
 subitus (adv.): below, beneath, underneath, in a lower place.  
 Subula (s.f. I): a fine sharp point, *lit.* 'an awl'. *subulatus* (adj. A), *subuliformis* (adj. B): subulate, awl-shaped, i.e. tapering from a narrow or moderately broad base to a very fine point. *subuli-* in *L. comp.*, subulate-; *subulifer*, awl-bearing, subulate; *subulifolius*, subulate-leaved; *subulisepalus*, with subulate sepals. 114  
 subvexus (adj. A): sloping upwards (*opp. of DEVEXUS*); see SLOPING.  
 succedaneus (adj. A): substituted, taking the place of something else; cf. STIPULANEUS.  
 successive: *successivus* (adj. A). successively: *deinceps* (adv.), *invicem* (adv.), *successive* (adv.); cf. ALIUS.  
 succidus (adj. A): juicy.  
 succineus (adj. A): amber-coloured.

succisus (part. A): abruptly broken off, cut across from below.  
 succosus (adj. A): full of juice, sappy.  
 succubus (adj. A): succubus, i.e. obliquely inserted on the stem so that the leaf-edge nearest the shoot-tip is overlapped by and covered by the lower edge of the leaf above; *folia succuba magna valde oblique inserta*, leaves succubous large very obliquely inserted.  
 succulent: *succulentus* (adj. A) 'sappy, juicy', *carnosus* (adj. A) 'abounding in flesh, fleshy'. 327  
 Succus (s.m. II): juice, sap.  
 Sucker: *surculus* (s.m. II), q.v.  
 Sucrose: *sucrosum* (s.n. II), *gen. sing. sucrosi*.  
 suddenly: *subito* (adv.), *abrupte* (adv.).  
 sufficiens (part. B): sufficient, adequate.  
 sufficienter (adv.): sufficiently, enough.  
 sufflatus (part. A): blown up, inflated, bloated; see INFLATUS, PHYSO-, VESICARIUS.  
 suffrutescens (adj. B): slightly woody. Suffrutex (s.m. III. i): half-shrub, subshrub, perennial plant with only lower part woody. *suffruticosus* (adj. A): somewhat woody, woody only at base.  
 suffultus (part. A): supported, propped, subtended.  
 suffusus (part. A): tinged, q.v.  
 Sugar: *saccharum* (s.n. II), *gen. sing. sacchari*; cf. SUCROSE. *sugary*: *saccharatus* (adj. A), *saccharinus* (adj. A).  
 sui (pron.): of itself.  
 suitable: *aptus* (part. A), *idoneus* (adj. A).  
 sulcatus (adj. A): furrowed or grooved. *sulcinervis* (adj. B), *sulcinervius* (adj. A): with grooved (i.e. sunken) nerves. Suleus (s.m. II): furrow or groove.  
 Sulphate: *sulphas* (s.m. III), *gen. sing. sulphatis*. Sulphide: *sulphidum* (s.n. II), *gen. sing. sulphidi*. Sulphur: *sulphur* (s.n. III), *gen. sing. sulphuris*; *less often* *sulfur* (s.n. III). Sulphur yellow: *sulphureus* (adj. A); *less often* *sulfureus* (adj. A), H.C.C.1. Sulphurated: *sulphuratus* (adj. A); *in fonte sulphurata*, in a sulphur spring. Sulphuric: *sulphuricus* (adj. A); *acidum sulphuricum*, sulphuric acid.  
 Summary: *summarium* (s.n. II), *nom. pl. summaria*.  
 Summer: *aestas* (s.f. III. ii); *aestate ineunte, inita aestate*, at the beginning of summer. pertaining to summer; *aestivalis* (adj. B), *aestivus* (adj. A); cf. SOLSTITIALIS.  
 suminopere (adv.): very much, exceedingly.  
 Summum (s.n. II): the top, highest place. summus (adj. A): uppermost, highest; *folia summa*, the uppermost leaves.

VOCABULARY

Sumptus (s.m. IV): cost, charge, expense; *sumptu auctoris*, at the author's expense; cf. IMPENSA. *sumptus* (part. A): taken.  
 sunken: *depressus* (part. A) 'pressed down', *impressus* (part. A), 'pressed into', *immersus* (part. A) 'immersed'.  
 sunny: *apricus* (adj. A).  
 super: (adv. and prep. with acc. or abl.): above, over, on top, during; in *L. comp.*, over, extra, above.  
 superans (part. B): overtopping, longer than, rising above; *inflorescentia folium caulinum superans*, inflorescence overtopping the caudine leaf. *superatus* (part. A): overtopped; *capsula foliis superata*, capsule overtopped by the leaves. *superaxillaris* (adj. B), *supra-axillaris* (adj. B): growing above an axil.  
 superficialis (adj. B): occurring on the upper surface. *superficialis* (adj. B): on the surface of an organ. Superficies (s.f. V): the upper surface, face.  
 superfluous (adj. A): superfluous, unnecessary.  
 superimpositus (part. A): placed upon, overlapping.  
 Superintendent: *praefectus* (s.m. II), curator (s.m. III. v).  
 superior (adj. compar.): higher, upper, former, preceding.  
 superior: *superus* (adj. A); *ovarium inferum vel semisuperum vel superum*, ovary inferior or half-superior or superior (*in relation to insertion of sepals, petals and stamens*).  
 superjectus (part. A): lying above.  
 superne (adv.): upwards, above.  
 superpendens (part. B): overhanging.  
 superpositus (part. A): placed over or upon, vertically above another part.  
 superus (adj. A): upper, higher, placed above, superior in position.  
 supervolutivus (adj. A): (*in vernation*) when one edge is rolled inwards and is covered by the opposite edge rolled inwards around it. 369  
 supinus (adj. A): bent backwards, prostrate; cf. PROCUMBENS.  
 suppetens (part. B): at hand, available.  
 suppeto (verb 3rd Conj.): be at hand, be present; *flores masculi non suppetabant*, male flowers were not available.  
 supported: *suffultus* (part. A), *fulcratus* (part. A), *fultus* (part. A). supporting: *sustinens* (part. B), *fulcrans* (part. B), *fulciens* (part. B).  
 swelling (adv. and prep. with acc.): on the upper side, above beyond, over.  
 supradecompositus (adj. A): supradecom- pound, i.e. so many times divided that the degree of division is not readily evident. 205  
 supraterraneus (adj. A): above-ground (*opp. of SUBTERRANEUS*); cf. EPIGAEUS, HYPOGAEUS.)  
 sur-: in *L. comp.*, somewhat. Variant of sub- (q.v.), used before words beginning with *r*, e.g. *surrectus*, almost straight.  
 Surculus (s.m. II): sucker, shoot, young branch.  
 Surface: *pagina* (s.f. I), *gen. sing. paginæ*, *abl. sing. pagina*, *nom. pl. paginæ*, *abl. pl. paginis*; cf. SUPERFICIES.  
 surges (part. B): arising, rising up.  
 surrogatus (part. A): substituted.  
 surrounded: *circumcinctus* (part. A), circumnexus (part. A). surrounding: *cincens* (part. B), *ambiens* (part. B); *nectarium crassum stylis basin cingens*, nectary thick the style base encircling.  
 sursum (adv.): upwards, from below; *sursum deorsum*, up and down.  
 suspended: dependens (part. B), suspensus (part. A).  
 sustinens (part. B): upholding, supporting. sutural: *suturalis* (adj. B). Suture: *sutura* (s.f. I), *acc. sing. suturam*, *abl. sing. sutura*, *nom. pl. suturæ*, *acc. pl. suturas*, *abl. pl. suturis*; *fructus legumen dictus in valvas 2 secus suturam superiore vel interiore et costam seu suturam dorsalem vel inferiore vel rarius more folliculi ad suturam superiore tantum dehiscens*, fruit called a legume in valves 2 along the upper or inner suture and the midrib or dorsal or lower suture or very rarely in the manner of a follicle at the upper suture alone dehiscing; *semina suturæ superiori ad margines valvarum alternatim affixa*, seeds to the upper suture at the margins of the valves alternately attached; *ovula juxta suturam vexillarem* (i.e. *suturam vexillo obversam*) *plura biserata*, ovules by the side of the vexillary suture (i.e. the suture turned towards the vexillum) many in two series.  
 Swamp: *palus* (s.f. III. ii), *gen. sing. paludis*, *abl. sing. palude*, *nom. pl. paludes*, *gen. pl. paludum*, *abl. pl. paludibus*. swampy, pertaining to swamps: *palustris* (adj. B).  
 Swarm: *grex* (s.m. III. i).  
 Swelling: *tumor* (s.m. III. v); *spinae geminae interdum basi in tumorem magnum vel maximum confluentes*, spines paired sometimes at base in a large or very large swelling grown together.  
 swelling up: *tumescens* (part B), *tumens* (part. B); cf. GIBBA, GIBBOSUS.  
 swimming: *natans* (part. B); *cellula cito natans*, cell rapidly swimming; *trichomata libere natantia*, trichomes freely swimming. 390

swinging: oscillans (part. B).  
 swollen: tumidus (adj. A). *Also in special senses*: gibbus (adj. A), strumosus (adj. A), ventricosus (adj. A), inflatus (part. A), sufflatus (part. A), praegnans (adj. B). swollen-: in *Gk. comp.*, onco-, oedo-,  
 sword-shaped: ensatus (adj. A), ensiformis (adj. B), gladiatus (adj. A). 116  
 Syllabus (s.m. II): list, register.  
 Sylloge (s.f. I): gathering, summary, collection of examples, assembly (*used only in book-titles*).  
 Sylva (s.f. I), Silva (s.f. I): wood, forest, woodland; *silva* is usual in class L., *sylva* in bot. L.  
 Sylvarius (s.m. II): forester, forest-officer; cf. FORESTER, SALTUARIUS.  
 sylvaticus (adj. A), silvaticus (adj. A), sylvestris (adj. B), silvestris (adj. B): pertaining to woods, growing wild (*opp. to CULTUS, SATIVUS*). Sylvicola (s.f. I): inhabitant of woods.  
 Symbola (s.f. I): contribution; nom. pl. symbolae; symbolae *Antillanae*, West Indian contributions.  
 Symbolus (s.m. II): sign, mark, token, symbol; nom. pl. symboli.  
 sympetalous (adj. A): gamopetalous, i.e. having united petals.  
 sympodial: sympodialis (adj. B). Sym-podium: sympodium (s.n. II).  
 Symподule: symподula (s.f. I).  
 Symposium: symposium (s.n. II).  
 syn-: in *Gk. comp.*, with, together. It becomes *sym-* before the letters *b*, *m* and *p*, as in *symbiosis*, *symmetricus*, *sym-petalus*, *sympyostemonus*.  
 Synandrium: synandrium (s.n. II), abl. sing. synandria.  
 synantherus (adj. A), synanthericus (adj. A): with anthers cohering together into a tube or ring; cf. SYNGENESIS.  
 synanthus (adj. A), synanthius (adj. A): with the flowers (*used of leaves produced at the same time as the flowers*); cf. COAE-TANUS, HYSTERANTHUS, TIME.  
 Syncarp: syncarpium (s.n. II), abl. sing. syncarpio. syncarpous: syncarpus (adj. A).  
 synclistus (adj. A): indehiscent.  
 synogenesis (adj. A): with anthers united together into a tube or ring; cf. SYNANTHUS.  
 Synnema: synnema (s.n. III. xi).  
 synoecius (adj. A), synoicus (adj. A): synoecious, i.e. having male and female flowers or organs mixed together in the same inflorescence.  
 Synonym: synonymum (s.n. II), nom. pl. synonyma, abl. pl. synonymis. Synonymy: synonymia (s.f. I); nomenclator

botanicus, seu synonymia plantarum universalis, enumerans ordine alphabetico nomina atque synonyma, botanical nomenclator or whole synonymy of plants, listing in alphabetical order names and synonyms.

Synopsis (s.f. III): general view, synopsis. syntheticus (adj. A): built of separate elements put together, as an allopolyploid species.

Syn-type: syntypus (s.m. II); cf. TYPUS.

Systema (s.n. III. xi): a whole consisting of several parts, system, orderly arrangement; *ambitus totius systematis ramificationis*, outline of the whole system of branching.

systylus (adj. A): with several styles united into one body.

## T

tabacarius (adj. A): relating to tobacco, e.g. used for making tobacco pipes, as in *Bambusa tabacaria*. tabacinus (adj. A): tobacco-coloured, pale brown.

tabescens (part. B), tabidus (adj. A): wasting away, becoming stunted, hence aborted.

Tabula (s.f. I): a print from a plate, hence full-page illustration in a book; pileus of certain fungi.

tabularis (adj. B): flattened horizontally, plate-like, (*in geographical epithets*) growing on Table Mountain, South Africa.

tabulatus (adj. A): provided with floors, consisting of layer upon layer, i.e. with transverse septa at intervals in a fruit.

tactilis (adj. B): sensitive to touch.

Tactus (s.m. IV): touch.

taeni-, taenio-: in *Gk. and L. comp.*, band-like, strap-shaped; *taenifrons*, with band-like fronds; *taeniphyllo*, with band-like leaves. Taenia (s.f. I): ribbon, band. taenianus (adj. A): long, somewhat flattened and contracted in various places, like a tapeworm (*Taenia*). taeniatus (adj. A), taeniformis (adj. B): band- or ribbon-like. 87

Tail: cauda (s.f. I), abl. sing. cauda.

tailed: caudatus (adj. A); cf. URO-. 152

taken away from: ademptus (part. A), demptus (part. A), taken out of: excerptus (part. A).

Talea (s.f. I): a cutting used for propagation.

talis (adj. B): such, of such a kind. taliter (adv.): in such wise.

tall: elatus (part. A), celsus (adj. A), procerus (adj. A), excelsus (adj. A), praelongus (adj. A), altus (adj. A). 340 tam (adv.): so far, equally, as.

tamdiu (adv.): so long (*of time*).

tamen (conj.): notwithstanding, nevertheless.

tandem (adv.): at length, finally.

tangerinus (adj. A): tangerine-orange (H.C.C. 9).

tangled: implexus (part. A), implicatus (part. A), implicitus (part. A).

tantoper: (adv.): so greatly, so very, to such a large extent.

tantum (adv.): to such a degree, only, merely, barely.

tantummodo (adv.): merely.

taper-pointed: acuminatus (adj. A).

tapering: contractus (part. A) 'drawn together', angustatus (part. A) 'narrowed', decrescens (part. A) 'growing less', diminutus (part. A) 'lessened', protractus (part. A) 'lengthened out', usually qualified by adv. such as *gradatim*, gradually, *longe*, long, *cuneatim*, cuneately, *sensim*, gently; *lamina basi in petiolum alatum gradatim decrescens*, blade at base into the winged petiole gradually diminishing.

tapeworm-shaped: taenianus (adj. A), q.v.

Tap-root: radix (s.f. III) palaris (adj. B); *radice palari*, with a tap-root.

tarde (adv.): slowly.

tardiflorus (adj. A): late-flowering; cf. SEROTINUS. tardus (adj. A): late, slow.

tartareus (adj. A): tartaceous, having a rough crumbling surface like tartar. 332

Taste: sapor (s.m. III. v), abl. sing. sapore; gustus (s.m. IV), abl. sing. gustu; pileus odore et sapore vix manifestis, pileus with smell and taste scarcely evident; *caro sapore vix sensibili*, *hanc amaro vel amariuscuso*, flesh with taste scarcely perceptible, never bitter or somewhat bitter; *sapore nullo vel dulci*, with taste none or sweet. tasteless: insipidus (adj. A); opposite of SAPIDUS; *caro inodora et insipida*, flesh odourless and tasteless.

tawny: fulvus (adj. A), rarus (adj. A).

Taxon: taxon (s.n. II), gen. sing. taxi, abl. sing. taxo, nom. pl. taxa, gen. pl. taxorum, abl. pl. taxis. Taxonomy: taxonomy (s.f. I).

tear-shaped: lacrimiformis (adj. B), (sometimes but incorrectly) lachrymaeformis. 12

tearing: findens (part. B).

Tectum (s.n. II): roof; *plantae tectorum*, plants of roofs.

tectus (part. A): covered, hidden, concealed.

Teeth: see TOOTH.

tegens (part. B): covering, concealing.

Tegmen (s.n. III. vi), Tegmentum (s.n. II): covering, hence used by older authors

for the glume of grasses, inner coat of a seed.

Tegula (s.f. I): tile, tiled roof, involucral scale, phyllary.

Tegumentum (s.n. II): indusium.

Tela (s.f. I): web, tissue, mycelium.

telianthus (adj. A): perfect-flowered, i.e.

hermaphrodite.

Teliospore: teliospora (s.f. I), teleutospore (s.f. I).

telmat-: in *Gk. comp.*, referring to wet meadows or pools.

temere (adv.), temeriter (adv.): at random, fortuitously.

temperate: temperatus (part. A); *regio temperata*, temperate region; *regiones temperatae*, temperate regions; *species in siccis regionum temperatarum hemisphaerae borealis indigenae*, species (pl.)

in dry places of the temperate regions of the northern hemisphere indigenous; *in hemisphaerae borealis regionibus temperatis et frigidis*, in temperate and cold regions of the northern hemisphere;

*species per zonas temperatas et calidas dispersae*, species (pl.) through temperate and warm zones dispersed;

*hepaticae in terris temperatis frequentes*, in *calidis et frigidis rariores*, liverworts in temperate lands frequent, in hot and cold ones rarer.

Temperature: temperatura (s.f. I).

temporally: temporaliter (adv.), in tempus, ad interim. temporary: temporarius (adj. A), temporalis (adj. B).

Tempus (s.n. III. iv): time, q.v.; *tempore florendi*, at the time of flowering; cf. ANTHESIS.

temulentus (adj. A): drunken, intoxicated.

ten: decem (num. adj. indecl.) 'ten', decimus (adj. A) 'tenth', decies (adv.), deciens (adv.) 'ten times'. ten-: in *L. comp.*, decem-, in *Gk. comp.*, deca-; decapetalus, 10-petalled; decemdentatus, 10-toothed; decangularis, abbr. of decemangularis, 10-angled.

Tenaculum (s.n. II): tenacle, i.e. circle of cilia, holdfast.

tenax (adj. B): holding fast, tough (*opp. to FRAGILIS*).

Tendril: cirrus (s.m. II) (*usu. applied to leaf-tendrils*), capreolus (s.m. II) (*usu. applied to shoot-tendrils*).

Tenellus (adj. A): delicate.

tenens (part. B): holding.

Tentaculum (s.n. II): sensitive glandular hair, as in Drosera.

Tentamen (s.n. III. iv): attempt.

tenth: decimus (adj. A).

tenui-: in *L. comp.*, slender, thin; *tenuicaulis*, with slender stem; *tenuiseptus*, finely cut.

tenuis (adj. B): thin, fine,

slender. *Tenuitas* (s.f. III. ii): thinness. *tenuiter* (adv.): finely, lightly. *tenuis* (prep. with abl.): as far as. *Tepal*: *tepalmum* (s.n. II), *gen. sing.* *tepali*, *abl. sing.* *tepalo*, *nom. pl.* *tepala*, *gen. pl.* *tepalarum*, *abl. pl.* *tepalis*. *tephro-*: in *Gk. comp.*, grey-, ash-grey; *tephropeplus*, with a grey covering. *Tepidarium* (s.n. II): moderately heated greenhouse. *tepidus* (adj. A): moderately warm, luke-warm. *ter* (adv.): three times, thrice. *terebrans* (part. B): boring, perforating, hence moving in a spirally twisting manner; *motus trichomatum regulariter et lente terebrans, haud irregularis et celer*, motion of filaments regularly and slowly turning spirally, not irregular and rapid. *teres* (adj. B): terete, i.e. circular in transverse sections, tapering or narrowly cylindric; *caulis teres*, stem terete; *folia teretia*, leaves terete; *caulibus foliisque teretibus*, with stems and leaves terete. *tereti-*: in *L. comp.*, terete-. *tereticaulis*, with terete stem; *teretifolius*, with terete leaves. *teretinsculus* (adj. A): somewhat terete. 28 *tergeminatus* (adj. A), *tergeminus* (adj. A): tergeminate, as when a common petiole bears at its tip two leaflets, between which arise two secondary petioles each bearing at its tip two leaflets. 218

*Term*: *terminus* (s.m. II), q.v. *terminal*: *terminalis* (adj. B), *terminatricus* (adj. A), *apicalis* (adj. B). *terminated*: *terminatus* (part. A). *terminating*: *terminans* (part. B). 466

*Terminology*: glossologia (s.f. I), terminologia (s.f. I).

*Terminus* (s.m. II): technical word, term; *termini botanici*, botanical terms.

*ternarius* (adj. A): consisting of threes. *ternato-pinnatus* (adj. A): ternately pinnate, i.e. with three secondary petioles arising from the tip of a common petiole. *ternatus* (adj. A): ternate, in threes, consisting of threes. *terni* (num. distr. adj. pl.): three each, three together. *terni-*: in *L. comp.*, three-; *ternifolius*, with three leaves or with the leaf consisting of three leaflets. *ternus* (adj. A): three. 219, 479

*Terra* (s.f. I): earth, ground, soil, land.

*terracotta*: *testaceus* (adj. A).

*terrestris* (adj. B): growing on the ground or soil, as opposed to rocks or trees.

*terreus* (adj. A): earth-coloured, brownish. *terricola* (s.c. I used as adj. A): dwelling on the ground.

*tertiarius* (adj. A): tertiary. *tertius* (adj. A): third.

*Tesca* (s.n. II. pl.): wastes, deserts, wild regions. *tessellatus* (adj. A). *tessularis* (adj. B): more or less cubical, all sides equal. *Testa* (s.f. I): outer coat of seed, *lit.* 'a piece of burned clay'; cf. *SEED-COAT*. *testaceus* (adj. A): brick-red (H.C.C. O. 16), 'brownish-yellow like that of unglazed earthenware' (Lindley), terracotta. *teste* (abl. sing. of *testis*): according to, *lit.* by the witness (of); *teste Smith et Jones*, according to Smith and Jones; *testibus Smith et Jones*, according to Smith and Jones; cf. *FIDE*. *testiculatus* (adj. A): testiculate, i.e. with two globose bodies, e.g. tubers, side by side. 66 *tetra-*: in *Gk. comp.*, four-, 4-; *tetragonolobus*, with 4-angled pods; *tetragonus*, 4-angled; *tetragynus*, with 4 styles or carpels; *tetramerus*, with parts in fours; *tetrandrus*, 4-stamened; *tetrapetalus*, 4-petaled; *tetrapterus*, 4-winged; *tetraspalpus*, 4-sepaled; *tetraspermus*, 4-seeded; see *FOUR-*, *QUADR-*. *tetradidymus* (adj. A): eight-fold or with four pairs. *tetrodynamus* (adj. A): tetrodynamic, i.e. with four long stamens and two short stamens. *tetradymus* (adj. A): having four cells. *tetrahedral*: *tetraedricus* (adj. A), *tetraedrus* (adj. A), *tetrahedralis* (adj. B). *tetrahedrally*: *tetraedrice* (adv.). *Tetrad*: *tetras* (s.f. III), *gen. sing.* *tetradis*; *tetradum* (s.n. II), *gen. sing.* *tetradi*. *Tetraspore*: *tetraspora* (s.f. I); cf. *SPORE*. *textilis* (adj. B): woven. *Textura* (s.f. I): tissue; *textura angularis*, tissue of short polyhedral cells without intercellular spaces; *textura epidermoidea*, tissue of closely interwoven irregularly disposed hyphae without interhyphal spaces, the walls united, usually forming a membranous or epidermis-like tissue; *textura globularis*, tissue of short rounded cells with intercellular spaces; *textura intricata*, tissue of interwoven irregularly disposed hyphae with distinct interhyphal spaces, the walls not united; *textura obliqua*, tissue of more or less parallel hyphae all in one direction, with narrow lumina and strongly thickened walls, cohering; *textura porrecta*, tissue of more or less parallel hyphae all in one direction, with wide lumina and non-thickened walls, not cohering; cf. Dissing in *Bot. Tidsskr.* 60: 109 (1964). *thalamiflorus* (adj. A): thalamiflora, i.e. having the petals and stamens arising directly and separately from the receptacle.

*Thalamium*: *thalamium* (s.n. II). *Thalamus* (s.m. II): the receptacle or torus. *thalassicus* (adj. A): sea-green, bluish-green. *thalliformis* (adj. B): like a thallus; cf. *THALLODES*. *thallinus* (adj. A), *thalloidalis* (adj. B), *thalloidicus* (adj. A): thalline, pertaining or belonging to a thallus; *margo thallinus cum thallo concolor, integer*, thalline margin the same colour as the thallus, entire. *thalloides* (adj. B), *thalloides* (adj. B): like a thallus; cf. *THALLIFORMIS*. *Thallus*: *thallus* (s.m. II); *thallus epiphloeoedes crustaceus uniformis tenuis* (60-80 $\mu$  *crassus*) *late expansus, substratum arcte obducens, griseus opacus, sorediis et insidiis desitutus, in margine linea obscuriore non cinctus*, thallus growing on the surface of bark crustaceus uniform thin (60-80 $\mu$  thick) broadly outspread, the substratum tightly covering, grey opaque, by soredia and insidia forsaken (i.e. lacking soredia and insidia), at the margin by a darker line not encircled; *thallus pro maxima parte endolithicus*, thallus for the most part growing within stone; *thalli superficies trichomatibus instructa*, of the thallus the upper side with trichomes arrayed; cf. *PHYCOMA*. *than*: *quam* (adv.), q.v. *that*: *ut* (conj.), used with subjunctive of verbs; *folia ita disposita ut verticillata videantur*, leaves so arranged that they appear verticillate. *the*: no equivalent: 'the' can usually be omitted but, when needed for emphasis or to make a distinction, can sometimes be expressed by *ille* indicating celebrity or *qui* or by a repetition of the word concerned; *pinnae variabiles, pinna longissima 3 cm. longa*, pinnae variable, with the longest one 3 cm. long; *pinnae quarum longissima 3 cm. longa*, pinnae of which the longest one 3 cm. long. cf. *ILLE*. *Theca* (s.f. I): theca, *lit.* 'a case', hence applied to the sporangium of a fern, the lateral half of an anther, the capsule of a moss, the ascus of a lichen, etc.; *theca horizontalis vel nutans pyriformis, pallide cuprea, operculo brevi conico acuto*, theca horizontal or nodding pear-shaped, pale copper, with the operculum short conical acute; *operculo thecae dimidium metente*, with the operculum measuring half of the theca (i.e. half the length of the theca); *laevitate thecae a congeneribus recedit*, by the smoothness of the theca it departs from others of the same genus; *thecae immaturae solum visae*, only immature thecae seen; *antherae obovatae, connectivo apice dilatato, thecis apice distantibus basi contiguis per rotam longitudinem rima dehiscentibus*, anthers obovate, with the connective broadened at the apex, the thecae separated at the apex touching at the base for the whole length by a fissure dehiscing; *antherae thecis duabus bilocularibus loculis longitudinaliter dehiscentibus*, anthers with two bilocular thecae with loculi longitudinally dehiscing. *-theca* (s.f. I): in *Gk. comp.*, -cover, -case, -container. *Thecium*: thecium (s.n. II). *thele-*: in *Gk. comp.*, nipple; *thelecarpus*, with a nipple-like fruit; *thelephorus*, bearing nipple-like projections; *thelespermus*, with seeds having nipple-like projections. *thely-*: in *Gk. comp.*, female. *then*: tum (adv.). *thence*: inde (adv.), illinc (adv.). *therefore*: ergo (adv.), ideo (adv.), igitur (adv.), itaque (adv.). *Thermae* (s.f. I. pl.): warm springs; *habitat thermas aponinas*, it inhabits the warm springs of Abano. *thermalis* (adj. B): relating to warm springs or water; *in aqua thermali stagnanti*, in stagnant warm water. *Thesaurus* (s.m. II): hoard, storehouse, treasury. *thick*: *crassus* (adj. A), *latus* (adj. A) 'broad', *densus* (adj. A) 'closely packed', *crassiusculus* (adj. A) 'somewhat thick'. *thick-*: in *L. comp.*, *crassi*, in *Gk. comp.*, *pachy-*; *crassifolius, pachyphyllus*, thick-leaved; *crassilabius, pachyphyllos*, thick-lipped; *crassinervius, pachyneurus*, thick-nerved; *crassipes, pachypodus*, with a thick support (petiole, peduncle or pedicel). *thickened*: *incrassatus* (part. A), *inspissatus* (adj. A). *thickening*: *spissescens* (part. B). 326 *Thicket*: *dumetum* (s.n. II), *abl. pl.* *dumetis*. *Thickness*: *crassities* (s.f. V), *crassitudo* (s.f. III. vi); *crassities setae porcinae*, the thickness of a pig's bristle; *caulis crassitie straminis triticei vel pennae corvinae vel gallinaceae*, stem with the thickness of straw of wheat or of the feather of a raven or domestic fowl. *thick-skinned*: *pachydermus* (adj. A), *pachydermicus* (adj. A). *thin*: *tenuis* (adj. B), *gracilis* (adj. B) 'slender', *exilis* (adj. B) 'meagre', *dilutus* (part. A) 'pale, diluted'. *Thinium* (s.n. II): dune. *thinly*: *tenuiter* (adv.), rare (adv.) 'not densely'.

Thinness: *tenuitas* (s.f. III. ii).  
third: *tertius* (adj. A); *triens* (s.m. III).  
thirty: *triginta* (num. adj. indecl.) 'thirty',  
    *tricenimus* (adj. A) 'thirtieth', *tricies*  
    (adv.), *tricens* (adv.) 'thirty times'.

this: *hic*, *haec*, *hoc* (demonst. pron.),  
    gen. sing. *hujus*; *hic* . . . *ille*, *hic* . . .  
    *alter*, this . . . that.

tholiformis (adj. B): dome-shaped. *Tholus*  
(s.m. II); dome, *cupola*.

Thorn: *spina* (s.f. I), *abl. sing. spina*, *nom. pl. spinae*, *abl. pl. spinis*. thorny: *spinosis* (adj. A), *senticosus* (adj. A); cf. PRICKLY.

though: *quamquam* (conj.) 'albeit', *velut*  
(conj.) 'just as', *etsi* (conj.) 'notwith-  
standing, but'.

Thread: *filum* (s.n. II). thread-like: *filiformis* (adj. B); *in Gk. comp.*, *nemato-*  
*three*: *tres* (num. adj.) 'three', *tertius*  
(adj. A) 'third', *ter* (adv.) 'three times,  
thrice', *terni* (num. distr. adj. pl.) 'three each, three together'; *folia tria*  
*foliolis tribus*, leaves 3 with leaflets 3;  
*laciniae sex*, *quarum tres exteriore*  
*reflexae*, *tres interiores erectae*, seg-  
ments 6, of which the 3 outer reflexed,  
3 inner erect; *ovarium triloculare*  
*trigonum*, *stylis tribus*, ovary 3-cham-  
bered 3-angled, with styles 3; *stylis tres*,  
styles 3; *folia verticillata terna vel*  
*quaterna*, leaves whorled three or four  
together. three: *in L. and Gk. comp.*,  
tri-; *trigonos*, *triangularis*, *triangulus*,  
*triquetrus*, 3-angled; *trichromus*, *tri-*  
*chromus*, *tricolor*, 3-coloured; *trianthus*,  
*triflorus*, 3-flowered; *trifyllus*, *tri-*  
*folius*, with 3 leaves or leaflets; *tri-*  
*pleurus*, *tricostatus*, 3-ribbed; *tripterus*,  
*trialatus*, 3-winged; *trimorphus*, *tri-*  
*formis*, existing in 3 forms, e.g. with  
short, intermediate and long stamens or  
with 3 types of florets or fruits; *see*  
*TRI-*. 41, 42, 345

thrice: *ter* (adv.).

thriving: *vigens* (part. B); *species ad saxa*  
*vel ad terram vigens*, a species on rock  
or on the ground thriving; *species ad*  
*corticem arboris vigentes*, species (pl.)  
on the bark of a tree thriving.

-thrix (s.f. III): *in Gk. comp.*, hair; gen.  
sing. -trichis; *callithrix*, beautiful hair;  
*chrysotrix*, golden hair; cf. TRICH-.

Throat: *faux* (s.f. III. i), *abl. sing. fauce*,  
    *nom. pl. fauces*, *abl. pl. faucibus*;  
*corolla fauce hirsuto flavo*, corolla with  
throat hairy yellow; *stamina fauci vel*  
*sub fauce inserta*, stamens on the throat  
or below the throat inserted; cf.  
MOUTH.

through: per (prep. with acc.); *planta per*  
*frutices humiles scandens*, plant through

dwarf shrubs climbing; *species per*  
*varias regiones dispersae*, species (pl.)  
through various regions dispersed.  
throughout: *penitus* (adv.), *omnino* (adv.),  
*ubique* (adv.).

thus: *ita* (adv.), *sic* (adv.); cf. THEREFORE.  
*Thylacoides* (s.f. III).

Thyriothecium: *thyriothecium* (s.n. II).

Thyrs: *thyrsus* (s.m. II), *acc. sing.*  
*thyrsus*, *abl. sing. thyrsus*.

thyrsiformis (adj. B), *thyrsoides* (adj. A):  
thyrsoid, like a thyrs.

Thyrsus (s.m. II): thyrs, i.e. a more  
or less ovoid or ellipsoid panicle, with  
cymose branches.

thyrsano: *in Gk. comp.*, fringe-; *thyrsano-*  
*chilus*, with a fringed lip; *thyrsano-*  
*stegius*, with a fringed covering.

Tide: *aestus* (s.m. IV), *acc. sing. aestum*,  
gen. sing. *aestus*, *abl. sing. aetu*, *nom. and acc. pl. aestus*, *gen. pl. aestuum*,  
*abl. pl. aestibus*; *alga in saxis inter*  
*marinorum aestuum accessum et recessum*  
*emersis crescens*, seaweed growing on  
rocks between flow and ebb of the sea  
tides exposed; *in lacibus minuente*  
*aestu relictis*, in pools left at the ebbing  
of the tide; *flexuus atque refluxus maris*,  
flow and ebb of the sea.

tight: *arctus* (adj. A) 'drawn together'.  
tightly: *arcte* (adv.)

Tigillum: *tigillum* (s.n. II), *abl. sing.*  
*tigillo*, *nom. pl. tigilla*, *abl. pl. tigillis*; cf.  
*Bull. Brit. Mus. (N.H.) Bot.* 3: 50 (1963).  
tigrinus (adj. A): tiger-like, i.e. spotted  
like a jaguar (*Felis onca*), the American  
'tiger' or, less often, barred like the  
Asiatic tiger (*Felis tigris*).

Time: *tempus* (s.n. III), *abl. sing. tempore*;  
*planta ab antiquissimis temporibus cognita*  
*sed ultimis temporibus neglecta*, plant  
known from most ancient times but in  
the latest times neglected. Adverbial  
expressions relating to time include:  
*tempore florendi*, at the time of flowering,  
*tempore liberationis*, at the time of release,  
*aliquamdiu*, *aliquantisper*, for a  
while, *interim*, meanwhile, *mox*, soon,  
*parumper*, for a little while, *semel*, a  
single time, *semper*, all the time, *simul*,  
at the same time. Adjectives include:  
*coetaneus*, of the same age, produced  
at the same time, *hystericanthus*, *hysteric-*  
*anthus*, following the flowers, produced  
after flowering, *longaevus*, of  
great age, ancient, *primaevus*, youthful,  
*synanthus*, *synanthius*, produced at the  
same time as the flowers; cf. AGE, ANNO-  
TINUS, ANTHESIS, FLOWERING, HORNO-  
TINUS, HACTENUS, PAULISPER.

times: usually expressed by adv. ending  
-plo or -ies, e.g. 2-vel 3-plo, duplo vel

*triplo*, two or three times, *sexies*, six  
times, *pluries*, several times, *multoties*,  
many times, *interdum*, at times.

Tinctor (s.m. III): dyer; *tinctorum*, of the  
dyers. *tinctarius* (adj. A): used in dyeing.

Tinea (s.f. I): clothes moth, ringworm;  
*tinea barbae capitis corporis cruris pedis*  
*unguim*, ringworm of the beard, head,  
body, groin, foot, nail.

tinged: *suffusus* (part. A), *tinctus* (part.  
A). *tingeing*: *tingens* (part. B). See p. 253.

tiny: *minutus* (adj. A); cf. LILLIPUTANUS.

Tip: *apex* (s.m. III. i), *acc. sing. apicem*,  
gen. sing. *apicis*, *abl. sing. apice*, *nom. pl.*

*apices*, *gen. pl. apicum*, *abl. pl. apicibus*;  
*apicem versus*, towards the tip; *ab*  
*apice usque ad imum*, from the top down  
to the bottom; *apice, ad apicem*, at tip.

Tissue: *contextus* (s.m. IV), *textura*  
(s.f. I), *tela* (s.f. I).

to: ad (prep. with acc.), *versus* (prep.  
with acc.); *plantae usque ad 2 m. altae*,  
plants up to 2 m. high.

tobacco-brown: *tabacinus* (adj. A).

Tofus (s.m. II): tufa.

together: *simul* (adv.), *una* (adv.) 'at the  
same time or place', *cum* (prep. with  
abl.) 'together with'.

tomentellus (adj. A): minutely tomentose.

tomentosus (adj. A): tomentose, i.e.  
thickly and evenly covered with short  
more or less appressed curled or curved  
matted hairs. *tomentulosus* (adj. A):  
minutely tomentose. *Tomentum* (s.n.  
II): tomentum, i.e. dense interwoven  
hair covering. 274

Tomus (s.m. II): volume, book.

tongue-shaped: *linguiformis* (adj. B),  
*lingulatus* (adj. A). -tongued: *in L.*  
*comp.*, -linguis (adj. B), *in Gk. comp.*,  
-glossus (adj. A); *latilinguis*, *platyl-*  
*glossus*, broad-tongued (usu. applied to  
the lip or labellum); cf. LIP. 39

tonsus (part. A): shaven, i.e. having  
become glabrous.

Tooth: *dens* (s.m. III. ix), *abl. sing. dente*,  
nom. pl. *dentes*, *abl. pl. dentibus*; *filamentorum interiorum dentes laterales*  
*breves obtusi vel acuti*, of the inner  
filaments the teeth lateral short obtuse  
or acute; *filamenta interiora basi dentata*,  
*dentibus lateribus acuminatis*, inner  
filaments toothed at base, with the  
teeth lateral acuminate. toothed: *denta-*  
*tus* (adj. A) (when the teeth are sharp  
and point outwards); *denticulatus* (adj.  
A) (when these teeth are minute);

*serratus* (adj. A) (when the teeth are  
sharp and point forwards or towards the  
apex); *serrulatus* (adj. A) (when these  
teeth are minute). -toothed: *in L. comp.*,

-dens, *dentatus*, *in Gk. comp.*, -odon,  
-odontus; *pauidens*, *paucidentatus*, *oli-*  
*godon*, *oligodontus*, few-toothed. tooth-  
less: *edentatus* (adj. A), *edentulus*  
(adj. A). 182, 183

Top: *see APEX, TIP, VERTEX*.

top-shaped: *turbanatus* (adj. A), *lit. 'cone-*  
*shaped'*. 10

tophaceous (adj. A): tufa-like, with a  
papillose or gritty surface.

Tophulus: *tophulus* (s.m. II).

topmost: *summus* (adj. A).

Topotypus (s.m. II): topotype, i.e. speci-  
men from the type-locality agreeing  
with the type-specimen.

tor: *laceratus* (part. A), *lacerus* (adj. A).  
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tornatus (part. A): rounded off.

torosus (adj. A), *torulosus* (adj. A):  
cylindrical with bulges or contractions  
at intervals; cf. MONILIFORMIS. 53

torquatus (adj. A): adorned with a collar  
or zone, twisted.

Torrent: *torrents* (s.m. III. ix), *acc. sing.*  
*torrentem*, *gen. sing. torrentis* (a con-  
traction of *fluvius* (s.m. II) *torrents*); *in*  
*Gk. comp.*, *rhyac-*; *see CATARACT,*  
*RIVER*.

torridus (adj. A): dry, dried up, parched.

Torsio (s.f. III): torsion, twisting.

torsivus (adj. A): twisted spirally.

torri-: *in L. comp.*, twisted; *torrifolius*,  
with twisted leaves; *tortispinus*, with  
twisted spines. *tortillia* (adj. B): liable  
to twist, twisted. *tortuosus* (adj. A):  
bent or twisted in different directions,  
involved, complicated. *tortus* (part.  
A): twisted. 414

torulosus (adj. A): *see TOROSUS*.

Torus (s.m. II): torus, receptacle.

tot (adj. indecl.): so many; *tot quot*, as  
many as; *see STAMEN*. *totidem* (adj.  
indecl.): just so many, just as many.  
toties (adv.): so many times.

tonus (adj. A): all, the entire, total.

Touch: *tactus* (s.m. IV); *folia ad tactum*  
*mollia*, leaves soft to the touch.

touching: *contiguus* (adj. A), *contingens*  
(part. B).

tough: *tenax* (adj. B).

towards: *versus* (prep. with acc.).

tower-shaped: *turriformis* (adj. B).

Town: *oppidum* (s.n. II), *gen. sing.*  
*oppidi*; cf. CITY.

toxicarius (adj. A): poisonous, q.v.

Trabecula: *trabecula* (s.f. I), *nom. pl.*  
*trabeculae*, *lit. 'a little beam'*.

trabeculate: *trabeculatus* (adj. A). *trabeculose*:  
*trabeculosus* (adj. A).

Tracheid: *tracheida* (s.f. I), *nom. pl.*  
*tracheidae*.

trachy-: *in Gk. comp.*, rough.

Tractatus (s.m. IV): treatise, tract.  
 tratus (part. A): handed over, delivered, communicated.  
 trahens (part. B): dragging, trailing.  
 trailing (creeping): serpens (part. B).  
 trailing (dragging): trahens (part. B).  
 Trama: trama (s.f. I), *abl. sing.* trama, *lit.* 'weft or filling of a web', hence applied to layer of hyphae in gill of agarics.  
 tranquillus (adj. A): calm, still; *see QUIET.*  
 trans (prep. with acc.): across, over beyond, on the farther side (*opp. of cis-in comp.*); *transalpinus*, beyond the Alps, i.e. on the north side of the Alps.  
 Transactions: acta (s.n. II. pl.).  
 Section: *transactio* (s.f. IV).  
 transeptatus (adj. A): with all cross walls transverse.  
 transferred: *translatus* (part. A).  
 transformatus (part. A): changed in shape.  
 transiens (part. B): passing over into, being changed into.  
 Transition: *transitus* (s.m. IV), *transitio* (s.f. III); *zona transitionis*, zone of transition.  
 transitivus (adj. A): passing over. *transitorius* (adj. A): intermediate, passing from one to the other. *Transitus* (s.m. IV): transition.  
 translatus (part. A): transferred.  
 translucent (part. B), *translucidus* (adj. A): clear, allowing light to shine through.  
 transmitted: *transmissus* (part. A): *stratum aurantiacum luce reflexa flavum luce transmissa*, layer orange by reflected light, yellow by transmitted light.  
 transmutatus (part. A): changed.  
 transparent: *diaphanus* (adj. A), *hyalinus* (adj. A), *pellucidus* (adj. A), *translucent* (part. B), *translucidus* (adj. A), *limpidus* (adj. A).  
 Transsectio (s.f. III): transection.  
 Transtrum (s.n. II): cross-beam, bar.  
 transverse: *transversalis* (adj. B), *transversarius* (adj. A), *transversus* (adj. A).  
 transversely: transverse (adv.), transversim (adv.), transversaliter (adv.).  
 trapezialis (adj. B), *trapeziformis* (adj. B), *trapezoideus* (adj. A): trapeziform, i.e. asymmetrically four-sided or like a triangle with the top cut off. 121  
 trapping: illaqueans (part. B): *hyphae vermiculos nematoideos illaqueantes*, hyphae trapping (ensnaring) eelworms (nematodes, little worms).  
 Travel: *iter* (s.n. III), *nom. pl.* *itinera*. relating to travel: *itinerarius* (adj. A).  
 traversed: *perductus* (part. A), 'led through', *peragratus* (part. A) 'travelled through'; *cf. PERCURSUS*.  
 treble: *triplus* (adj. A). trebly: *ter* (adv.), *tripliciter* (adv.).

Tree: *arbor* (s.f. III. v), *nom. pl.* *arbores*; *arbor Americae tropicae parva et humili vel mediocris vel etiam procta, truncus usque ad 1 m. diametro, 3 m. peripheria, ligno albido fragili, cortice cinereo fissili, ramis patentibus*, tree of tropical America small and low or medium-sized or even tall, with the trunk up to 1 m. in diameter, 3 m. in circumference, the wood whitish fragile, the bark grey splitting, the branches spreading.  
 tree-like: *dendroideus* (adj. A); *dendriticus* (adj. A) (*used of hairs*); *arboreus* (adj. A) (*used of whole plant*). 238  
 trellis-like: *cancellatus* (adj. A), *clathratus* (adj. A). 243  
 trembling: *tremulus* (adj. A).  
 tremelloides (adj. A): gelatinous, jelly-like, resembling in this the genus *Tremella* or 'trembling fungi'.  
 tremulus (adj. A): trembling.  
 tres (num. adj.): three, q.v.  
 tri-: in *L.* and *Gk. comp.*, three-; *triandrus*, 3-stamened; *tribracteatus*, 3-bracted; *tricephalus*, 3-headed; *tricoccus*, with 3 cocci, i.e. breaking into 3 one-seeded parts; *tricornis*, 3-horned; *tricuspidatus*, with 3 cusps; *tridentatus*, 3-toothed; *trifidus*, 3-cleft; *trifurcatus*, with 3 forks or branches; *triglans*, with 3 nuts in an involucre; *trigynus*, with 3 carpels or styles; *trijugus*, with 3 pairs of pinnae; *trilobatus*, *trilobus*, 3-lobed; *trilocularis*, 3-chambered; *trimerus*, with parts in threes; *trinervis*, *trinervius*, 3-nerved; *triovulatus*, with 3 ovules; *tripartitus*, 3-parted; *tripetalus*, 3-petaled; *tripinnatus*, 3 times pinnate; *triseptus*, 3-cleft to the base; *trisepalus*, 3-sepaled; *trispermus*, 3-seeded; *tristylus*, 3-styled; *trisulcatus*, 3-furrowed; *triternatus*, 3 times ternate; *trivittatus*, 3-banded; *trunciculus*, 3 inches long; *see THREE-*. 161, 223, 224, 345  
 Triangle: *triangulum* (s.n. II). triangular: *triangularis* (adj. B), *triangulatus* (adj. A), *triangulus* (adj. A), *deltatus* (adj. A), *deltoides* (adj. A). These may be qualified by *perdepresso*, 'very shallowly', and adverbs listed under *TRULLATUS*, q.v. triangular in transverse section: *triqueter* (adj. A). triangularly: triangulariter (adv.), *triangule* (adv.). 120  
 Tribe: *tribus* (s.f. IV), *gen. sing.* *tribus*, *abl. sing.* *tribu*, *nom. pl.* *tribus*, *gen. pl.* *tribuum*, *abl. pl.* *tribubus*.  
 tribuliformis (adj. B): tribuliform, i.e. with four projecting and diverging spines somewhat like the Roman *tribulus*, a four-pronged iron implement used to impede cavalry; *cf. TRINACRIFORMIS*.

tricensimus, tricesimus (adj. A): thirtieth.  
 trich-, tricho-: in *Gk. comp.*, hairy or hair-like; *trichantherus*, with hairy anthers; *trichanthus*, with hairy flower; *trichocalyx*, with hairy calyx; *trichodon*, with hairy teeth; *trichocoleus*, with hairy sheath; *trichophyllus*, with hairy leaves or fine hair-like leaves.  
 Trichoblast: *trichoblastus* (s.m. II).  
 Trichogyne: *trichogyne* (s.f. III) or *trichogyna* (s.f. I), *gen. sing.* *trichogynes* or *trichogyna*, *abl. sing.* *trichogyne* or *trichogyna*, *nom. pl.* *trichogynes* or *trichogyna*, *gen. pl.* *trichogynum* or *trichogynarum*, *abl. pl.* *trichogynibus* or *trichogynis*.  
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two shorter straight sides meeting at base. It may be qualified by the adverbs *anguste*, narrowly, *late*, broadly, *latisime*, very broadly, and *depresso*, depressed. See Fig. 19 F (p. 318).

truly: *vere* (adv.).

trumpet-shaped: *buccinatus* (adj. A), *buccinatorius* (adj. A) (when somewhat curved); *tubaeformis* (adj. B), *tubatus* (adj. A) (when almost straight). The Roman *tuba* was a straight-sided instrument, the *bucina* a strongly curved one; cf. FUNNEL-SHAPED, TROMBIFORMIS. 54

*truncatus* (part. A): truncate, i.e. ending very abruptly as if cut straight across. 158, 171

Trunk: *truncus* (s.m. II).  
*Tuba* (s.f. I): trumpet; cf. TRUMPET-SHAPED.

*tubaeformis* (adj. B), *tubatus* (adj. A): trumpet-shaped, q.v. 54

Tube: *tubus* (s.m. II), *abl. sing.* *tubo*, *nom. pl.* *tubi*, *abl. pl.* *tubis*; *siphon* (s.m. III. vi), *abl. sing.* *siphone*, *nom. pl.* *siphones*, *abl. pl.* *siphonibus*; *corollae tubus cylindricus inferne albus supra medium rubescens vel ruber, extus glaber, intus pubescens vel etiam annulo pilorum sub apice ornatus*, c. 1 cm. longus 4 mm. *latus*, of the corolla the tube cylindric below white above the middle reddish or red, outside glabrous, inside pubescent or even with a ring of hairs below the top ornamented, about 1 cm. long 4 mm. wide; *corolla e tubo angusto 1 cm. longo sensim ampliata, fauce nuda, tubo ima basi saepius annulo piloso vel carnuloso instructo, staminibus tubo medio insertis*, corolla from a narrow tube 1 cm. long gradually expanded, with the throat naked, with the tube at the very base most often with a pilose or rather fleshy ring furnished, with the stamens to the tube at the middle attached.

Tuber: *tuber* (s.n. III. v), *gen. sing.* *tuberis*, *abl. sing.* *tubere*, *nom. pl.* *tubera*, *abl. pl.* *tuberibus*; *tuber magnum globosum vel irregulare 10 cm. latum, carne albida amara*, tuber large globose or irregular, with flesh whitish bitter; *tubera geminata ellipsoidea vel dauciformia 2-4 cm. longa*, tubers paired ellipsoid or carrot-shaped 2-4 cm. long; *herba tubere parvo cavo*, herb with tuber small hollow.

*tuberans* (adj. B), *tuberascens* (adj. B): becoming swollen or tuberous.

*Tuberculum* (s.n. II): tubercle. *tuberularis* (adj. B): having tubercles or like a tubercle. *tuberulatus* (adj. A):

tuberculate, i.e. covered with wart-like projections. *tuberuliformis* (adj. B): like a tubercle. 268

*tuberifer* (adj. A): tuber-bearing. *tuberous* (adj. A): producing tubers or swollen into a tuber.

*tubiformis* (adj. B): tube-like; cf. TUBAEFORMIS. *tubiflorus* (adj. A), *tubuliflorus* (adj. A): with symmetrical tubular (as distinct from rayed) florets, with tubular flowers.

*tubular*: *tubularis* (adj. B), *tubulosus* (adj. A), *siphonaceus* (adj. A); cf. FISTULOSUS. 6

*tubulatus*: trumpet-shaped, q.v.

*Tubule*: *tubulus* (s.m. II): *tubuli ad stipitem decurrentes flavi*, tubules on to the stipe decurrent yellow; *caro tubulos purpurea*, flesh at the tubules purple. *tubuliformis* (adj. B): like a tubule.

*Tubus* (s.m. II): tube, q.v.

*Tufa*: *tofus* (s.m. II).

*Tuft*: *caespites* (s.m. III. iii). *tufted*: *caespitosus* (adj. A), *cespitosus* (adj. A). *tum* (adv.): then, at that time, thereupon, and also, but also, if so, furthermore. Used in enumerations of characters indicating sequence, as with *primum*, *deinde*, *prostremo*, or contrast, as with *quam*; *descriptio e speciminiibus plurimis quam siccis tum vivis*, description from very many specimens not only dried but also living.

*tumens* (part. B): swelling, being swollen.

*tumescens* (part. B): swelling up.

*tumidus* (adj. A): *tumid*, swollen, thickened, protuberant; cf. PRAEGNANS.

*Tumor* (s.m. III. v): *tumour*, swelling.

*Tumulus* (s.m. II): mound, hillock.

*tunc* (adv.): then, immediately.

*Tundra*: *tundra* (s.f. I).

*Tunic*: *tunica* (s.f. I), *abl. sing.* *tunica*, *nom. pl.* *tunicae*, *abl. pl.* *tunicis*, *lit.* 'an under-garment'; *tunica praecipua tenuissime membranacea demum in fibras parallelas soluta*, chief tunic (covering) very thinly membranous at length into fibres parallel broken up; *tunica cibraria fibris reticulatis colore stramineo pallido*, tunic sieve-like with fibres reticulate with the colour strawy pale; *bulbus tunicis pergamenis punctatis, interioribus candidis exterioribus nigricantibus*, bulb with tunics parchment-like dotted, with the inner ones white the outer ones becoming black; *herba bulbi tunicis reticulato-fibrosis castaneis*, herb with tunics of the bulb reticulate-fibrous chestnut-coloured; cf. BULB.

*tunicatus* (adj. A): tunicate, having coats

or envelopes or a thin separable covering.

*Turbarium*: (s.n. II): peat bog.

*turbatus* (adj. A): disturbed, disordered.

*turbinatus* (adj. A): turbinate, i.e. top-shaped or obconical. 10

*Turfosum* (s.n. II): peat moor. *turfosus* (adj. A): peaty.

*turgidus* (adj. A): inflated, swollen with air or water, slightly swelling; cf. DISTENTUS. 95

*Turion*: *turio* (s.m. III. vi); *turio juvenilis erectus*, young turion erect; *turiones flagellares arcuati pilosi, aculeis parvi armati, superne glandulis stipitatis dispersi*, turions whip-like arching pilose, with prickles small armed, above with glands stalked sprinkled; see PRIMO-CANE.

*Turma* (s.f. I): troop, squadron, throng, group of species; *species e turma Selaginellae bisulcatae*, species from (i.e. belonging to) the group of (i.e. typified by) *Selaginella bisulcata*.

*Turn*: *anfractus* (s.m. IV); *chlorophoro singulo anfractibus 2-5*, with a single chloroplast having 2-5 turns.

*turn, in*: *invicem* (adv.); cf. VICISSIM.

*turned towards*: *versus* (adv.) (usu. preceded by adv. or name of object in acc.); *obversus* (part. A); *apicem versus*, towards the tip; *sursum versus*, upwards; *sutura vexillo obversa*, suture turned towards the vexillum, i.e. on the side nearest the vexillum. Cf. DIRECTION.

*turning*: change of state or process of becoming is usually expressed by part. ending *-escens* or *-ascens*; *thallus lutescens*, thallus turning yellow.

*turnip-shaped*: *napiformis* (adj. B), *rapi-formis* (adj. B).

*turritiformis* (adj. B): tower-shaped.

*twelve*: *duodecim* (num. adj. indecl.) 'twelve', *duodecimus* (adj. A) 'twelfth', *duodecies* (adv.), *duodeciens* (adv.) 'twelve times'. *twelve*:- in Gk. comp., *dodeca-*; *dodecandrus*, 12-stamened.

*twenty*: *viginti* (num. adj. indecl.) 'twenty', *vicensimus* (adj. A) 'twentieth', *vicies* (adv.) or *viciens* (adv.) 'twenty times'.

*twice*: *bis* (adv.).

*Twig*: *ramunculus* (s.m. II), *abl. sing.* *ramunculo*, *nom. pl.* *ramunculi*, *abl. pl.* *ramunculis*; see VIRGA.

*twining*: *volubilis* (adj. B). Direction of twining is indicated by the adverb *sinistrorum*, 'towards the left side', or *dextrorum*, 'towards the right side', the phrase *extus vis.* or *externe vis.*, 'seen from outside' or *e latere vis.*, 'seen from the side' distinguishing the

viewpoint of an observer with the stem in front of him from that of a person who imagines himself entwined within its coil (*e centro vis.*, 'seen from the centre') or climbing a spiral stairway; cf. A. Gray in *Amer. J. Sc.* III. 3: 162 (1880), Schmucker in *Beih. Bot. Centralbl.* 41, i: 51 (1924); *caulis sinistrorum (externe visus) volubilis*, stem to the left (seen from the outside) twining; *frutices saepius volubiles*, shrubs most often twining; *herbae caulinibus volubilibus*, herbs with twining stems; cf. ANTIHELICTE, CLOCKWISE, HELICTE. 418

*twinned*: *gemellus* (adj. A), *geminus* (adj. A), *geminatus* (adj. A), *binatus* (adj. A), *didymus* (adj. A). 232, 503

*Twist*: *convoluta* (s.f. I), *spira* (s.f. I); *cellulae spirales* 8-9 *convolutas ostendentes*, spiral cells showing 8-9 twists; cf. TURN. *twisted*: *tortus* (part. A), *tortilis* (adj. B), *torsivus* (adj. A); in Gk. comp. *strepto-*. 382

*two*: *duo* (adj. num.) 'two', *secundus* (adj. A) or *alter* (adj. B) 'second', *bini* (adj. num. distr. pl.) 'two each', *bis* (adv.) 'twice'; *folia quaterna, in quo verticillo duo longiora, duo breviora*, leaves four together, in each whorl two longer, two shorter; *angulis binis*, with two angles. *two*:- in L. comp., *bi-*, in Gk. comp., *di-*; *bicolor*, *bicoloratus*, *dichrous*, *dichromus*, two-coloured; *biflorus*, *dianthus*, two-flowered (but the generic name *Dianthus* is a contraction of *Diosanthos*, flower of Zeus); *bifarius*, *distichus*, distichous; *bicornis*, *bicornutus*, *diceras*, with two horns; *bifolius*, *diphyllus*, with two leaves or leaflets; *bistratus*, *distromaticus*, two-layered; *bicontorus*, *dicyclus*, with two circular twists; *biformis*, *dimorphus*, of two shapes; *bispicatus*, *distachys*, with two spikes; *białatus*, *dipterus*, two winged; see BI-, DI-, TWINNED.

*tylananthus* (adj. A): having spines on ridges, the primary rows bearing the spine-cells being more prominent than the secondary; cf. AULACANTHUS.

*tylo*:- in Gk. comp., with knobs, lumps or projections.

*tymaniformis* (adj. B): drum-shaped.

*Tympanum* (s.n. II): epiphragm.

*Type*: *typus* (s.m. II), *abl. sing.* *typo*; *generotypus*, *typus generis*, type-species of a genus; *holotypus*, the one specimen or element used by the author of a name or designated by him as nomenclatural type; *isotypus*, duplicate of the holotype; *lectotypus*, specimen selected from original material to serve

as nomenclatural type when the holotype is missing or not designated; *neotypus*, specimen selected for working purposes as representative when all of original material is missing; *paratypus*, specimen cited with the original description other than the holotype; *syntypus*, one of the specimens used by the author when no holotype was designated or when two or more were simultaneously designated as type; cf. *TOPOTYPUS*.

**typical**: *typicus* (adj. A); *terra typica* *restricta*: restricted type locality. *typically*: *typice* (adv.).

**tyrius** (adj. A): tyrian purple (H.C.C. 7. 27).

## U

**ubi** (adv.): in which place, where, when. **ubicumque** (adv.): where, anywhere.

**ubique** (adv.): everywhere, in any place whatever, throughout.

**udus** (adj. A): wet, moist, damp, soaked; *see MADIDUS*.

**uliginosus** (adj. A): marshy, growing in marshes; *see PALISTRIS*.

**ullus** (adj. A): any, anyone. **Ulna** (s.f. I): an ell, 2 feet, approx. 65 cm. **ulnaris** (adj. B): 2 feet long.

**ulterior** (adj. compar.): farther, on the farther side. **ulterius** (adv.): beyond, farther on. **ultime** (adv.): extremely.

**ultimus** (adj. A): farthest, most distant, ultimate, last.

**ultimately**: *ad extremum*, *ad finem*, *extremum* (adv.), *postremo* (adv.).

**ultra** (adv.): on the other side, beyond, farther. **ultra** (prep. with acc.): on the farther side of, past, beyond, above, more than.

**ultro citroque, ultro et citro** (adv.): to and fro, backwards and forwards.

**Umbel**: *umbella* (s.f. I), *gen. sing. umbellae*, *abl. sing. umbella*, *nom. pl. umbellae*, *abl. pl. umbellis*, *lit. 'sunshade, parasol'*;

*umbella* *bulbillis* *carens*, *capsulifera*, *multiflora*, *irregularis*, *umbel* lacking bulbils, capsule-bearing, many-flowered,

irregular; *spatha umbellam aequans vel paulo longior vel raro brevior*, *spatha* equalling the umbel or a little longer or rarely shorter; *umbella simplex*, simple umbel. **umbellate**: *umbellatus* (adj. A).

**umbelliformis** (adj. B): shaped like an umbel; cf. *CORYMBOSE*.

**Umbellula** (s.f. I): partial umbel, ultimate umbel in a compound umbel. **umbellulatus** (adj. A): furnished with partial umbels.

**umber**: *umbrinus* (adj. A).

**umbilicatus** (adj. A), **umbiliformis** (adj. B): navel-like, having a small central depre-

sion or hollow; also used by some authors in the sense of *PELTATUS*.

**Umbilicus**: *umbilicus* (s.m. II), *abl. sing. umbilico*.

**Umbo**: *umbo* (s.m. III. vi), *abl. sing. umbone*, *umbonatus* (adj. A): having a rounded projection or umbo in the middle. 20

**Umbra** (s.f. I): shade, shadow.

**umbrauliformis** (adj. B): umbrella-shaped. 89

**Umbraculum**: *umbraculum* (s.n. II).

**umbrinus** (adj. A): umber, brown.

**umbrosus** (adj. A): shady, growing in shade.

**un-**: the negative or contrary expressed in English by the prefix 'un-' is often rendered in Latin by the prefix *in-* or *im-* (before *b*, *m* or *p*) or *e-* or *ex-* (before vowels) or the adverb *haud* or *non*.

**una** (adv.): at the same time, together.

**unarmed**: *inermis* (adj. B), *nudus* (adj. A). 260

**uncatus** (adj. A): hooked, bent inwards. 147

**uncertain**: *incertus* (adj. A), *dubius* (adj. A), *ambiguus* (adj. A).

**unchangeable, unchanging**: *immutabilis* (adj. B), *unchanged*: *immutatus* (adj. A).

**Uncia** (s.f. I): twelfth part,  $\frac{1}{12}$  foot, 1 inch, approx. 2.5 cm.; same as *POLLEX*, q.v.

**uncialis** (adj. B): 1 inch long.

**unciformis** (adj. B): hook-shaped. **uncinatus** (adj. A): barbed, hooked.

**uncommon**: *rarus* (adj. A). **uncommonly**: *raro* (adv.).

**unctulus** (adj. A), *unctuosus* (adj. A): having an oily or greasy appearance.

**unctus** (part. A): greasy, oiled. 302

**Uncus** (s.m. II): hook, barb.

**undatum** (adv.): in a wavy manner. **undatus** (adj. A): wavy.

**unde** (adv.): from which place, whence.

**undecided**: *incertus* (adj. A).

**undeciens** (adv.), *undecies* (adv.): eleven times, elevenfold. **undecim** (num. adj. indecl.): eleven. **undecimus** (adj. A): eleventh.

**under** (prep.): *sub* (prep. with *abl.*, when no motion is implied, and *acc.*), *subter* (prep. with *abl.* and *acc.*). **under** (adj.): *inferus* (adj. A), *inferior* (adj. compar. B); *folia inferiora*, underleaves.

**undergoing**: *subiens* (part. B); *cellulae divisiones subeuntis*, cells undergoing divisions.

**underground**: *subterraneus* (adj. A), *hypogaeus* (adj. A).

**underneath**: *infra* (adv. and prep. with *acc.*), *subter* (adv. and prep. with *abl.* and *acc.*), *subitus* (adv.).

**Undershrub**: *suffrutex* (s.m. III. i).

**undeveloped**: *immaturus* (adj. A).

**undique** (adv.): on all sides.

**undivided**: *indivisus* (adj. A), *simplex* (adj. B).

**undulate**: *undulatus* (adj. A), *undatus* (adj. A). 132

**undulato-striatus** (adj. A): having wavy elevated lines.

**unequal**: *inaequalis* (adj. B), *impar* (adj. B), *dispar* (adj. B); *foliis disparibus*, *inferiore grandiusculo reliquis multo minoribus*, with leaves unequal, the lower one rather large, the rest much smaller. **unequally**: *inaequaliter* (adv.), *impariter* (adv.); *imparipinnatus*, unequally pinnate. **unequal-sided**: *in-aequilaterus* (adj. A), *irregularis* (adj. B); *foliola valde inaequilatera, latere altero quam alterum multo breviore*, leaflets very unequal-sided, with one side than the other much shorter. 134, 136

**uneven**: *inaequalis* (adj. B), *asper* (adj. A) 'rough' used of uneven places.

**unexpected**: *inopinatus* (adj. A), *inexpectatus* (adj. A).

**unexplored**: *inexploratus* (adj. A).

**unfavourable**: *iniquus* (adj. A), *adversus* (adj. A).

**unfinished**: *inchoatus* (part. A), *imperfectus* (adj. A).

**unfruitful**: *infecundus* (adj. A), *sterilis* (adj. B).

**unguicularis** (adj. B):  $\frac{1}{2}$  inch (1.3 cm.) long, clawed. **unguiculatus** (adj. A): clawed. **Unguis** (s.m. III. xii): claw, narrowed basal part of a petal, length of a fingernail,  $\frac{1}{2}$  inch, 1.3 cm.

**ungulatus** (adj. A), *unguliformis* (adj. B): hoof-shaped, clawed.

**uni-**: *in L. comp.*, one-; *uniaristatus*, with one awn; *unibracteatus*, with one bract; *unicapularis*, with all the carpels united into one capsule; *unicaulis*, with a single stalk or stem; *unicellularis*, one-celled; *unifarius*, in one row; *uniclavis*, with one pair of leaflets; *unilabiate*, one-lipped; *unilateralis*, one-sided; *unilocularis*, one-chambered; *uninervis*, *uninervius*, one-nerved; *uniovulatus*, with the ovule solitary; *uniseptatus*, with one septum; *uniserialis*, *uniseriatus*, in one row; *unisexualis*, of one sex, i.e. having only an androecium or a gynoecium, not both together in one flower; *univalvis*, one-valved; *univittatus*, one-banded; *see MON-*, ONE-.

**until**: *dum* (conj.), *ad* (prep.).

**untouched**: *intactus* (adj. A).

**untrue**: *falsus* (adj. A), *mendosus* (adj. A).

**unus** (adj. A): one.

**unusquisque** (comp. pron. m.), *unaquaeque* (f.): each single one, each one singly, each (of a number of objects, in contrast to *uterque* which refers to each one of a pair); *dentes triangulares*, *nervo ex uniusquisque apice decurrente*, teeth triangular, with the nerve from the apex of each single one decurrent; *in unoquoque loculo*, in each loculus.

**unusual**: *infrequens* (adj. B), *insolitus* (adj. A), *singularis* (adj. B), *egregius* (adj. A),

**uniform**: *aequabilis* (adj. B), *uniformis* (adj. B). **uniformly**: *uniformiter* (adv.), *aequo* (adv.), *aequabiliter* (adv.).

**unilateral**: *unilateralis* (adj. B); cf. *SECUNDUS*. 490

**uninterrupted**: *continuus* (adj. A). 501

**Union**: *junctio* (s.f. III), *coniunctio* (s.f. III), *copulatio* (s.f. III); cf. CON-

JUGATION, JOIN.

**unisexual**: *unisexualis* (adj. B), *diclinis* (adj. B); *flores unisexuales*, flowers unisexual, i.e. having male organs in one flower, female in another.

**unistratose**: *unistratus* (adj. A).

**Unit**: *mónas* (s.f. III), *gen. sing. monadis*. **united**: *conjunctus* (part. A), *unitus* (part. A), *connatus* (part. A).

**uniusquisque**: *see UNUSQUISQUE*.

**universalis** (adj. B): general, of or belonging to the whole; *involutum universale*, general involucrum; *volva universalis*, universal veil.

**Universe** (adv.): in general, generally. in universum (adv. phrase): as a whole.

**University**: *universitas* (s.f. III. ii), *academia* (s.f. I) (*used only of the older European universities*); *delectus seminum ex Horto Cantabrigiensis Academiae*, a selection of seeds from the Cambridge University Garden; *Hortus publicus Academiae Lugduno-Batavae*, Botanic Garden of Leiden University.

**unknown**: *ignotus* (adj. A), *incognitus* (adj. A).

**unlawful**: *illegitimus* (adj. A).

**unless**: *nisi* (conj.).

**unlike**: *dissimilis* (adj. B, with gen. or dat. of noun compared), *diversus* (part. A); *species H. excelsae habitu dissimilis*, species unlike *H. excelsa* in habit.

**unpleasant**: *ingratius* (adj. A); cf. STINKING.

**unpolished**: *impolitus* (adj. A).

**unquam** (adv.): at any one time.

**uripe**: *immaturus* (adj. A), *crudus* (adj. A).

**unspotted**: *astictus* (adj. A), *immaculatus* (adj. A).

**until**: *dum* (conj.), *ad* (prep.).

**untouched**: *intactus* (adj. A).

**untrue**: *falsus* (adj. A), *mendosus* (adj. A).

**unus** (adj. A): one.

**unusquisque** (comp. pron. m.), *unaquaeque* (f.): each single one, each one singly, each (of a number of objects, in contrast to *uterque* which refers to each one of a pair); *dentes triangulares*, *nervo ex uniusquisque apice decurrente*, teeth triangular, with the nerve from the apex of each single one decurrent; *in unoquoque loculo*, in each loculus.

**unusual**: *infrequens* (adj. B), *insolitus* (adj. A), *singularis* (adj. B), *egregius* (adj. A),

insuetus (adj. A). **unusually**: insolenter (adv.), egregie (adv.), raro (adv.).  
**unwearied**: indefessus (adj. A).  
**up to**: usque ad (prep. with acc.).  
**upholding**: sustinens (part. B).  
**upon**: super (prep. with acc.) 'on top', de (prep. with abl.) 'concerning'.  
**upper**: superus (adj. A), supernus (adj. A); *compar.* superior (adj. A), 'yet higher, higher than'; *superl.* supremus (adj. A), summus (adj. A) 'highest'.  
**upper side, on the**: supra (adv.).  
**uppertmost**: summus (adj. A), supremus (adj. A).  
**upright**: erectus (part. A), verticalis (adj. A).  
**upwards**: sursum (adv.).  
**urbanus** (adj. A): pertaining to towns and cities as distinct from the country.  
**Urbs** (s.f. III): city.  
**urceolatus** (adj. A): pitcher-, vase- or urn-shaped, i.e. hollow, more or less rounded and distinctly contracted at the mouth, with the limb small. *Urceolus* (s.m. II): urceole. 73  
**Uredinium**: uredinium (s.n. II).  
**uredinoid**: uredinoideus (adj. A).  
**Urediospore**: urediospora (s.f. I).  
**Uredium**: uredium (s.n. II).  
**Uredosorus**: uredosorus (s.m. II).  
**Uredospore**: urediospora (s.f. I), uredospore (s.f. I), urediniospora (s.f. I).  
**urens** (part. B): stinging.  
**urniformis** (adj. B): urn-shaped.  
**uro-, -urus**: in *Gk. comp.*, tail-, tailed, i.e. with an elongated or tail-like appendage; *urophyllus*, tail-leaved, i.e. with leaves having an elongated tip; *urosepalus*, with tailed or appendaged sepals; *macrurus*, with a large tail.  
**Use**: usus (s.m. IV), gen. sing. usus, abl. sing. usu. **useful**: utilis (adj. B).  
**usefully**: utiliter (adv.). **Usefulness**: utilitas (s.f. III. ii), gen. sing. utilitatis, abl. sing. utilitate. **useless**: inutilis (adj. B).  
**usitatus** (part. A): usual, customary, habitual, ordinary.  
**usnic**: usneicus (adj. A): *acidum usnicum*, usnic acid.  
**usque** (adv.): all the way to, continuously, as far as (*usu. followed by ad with object in acc.*); *capitulis usque 4 cm. longis*, with heads up to 4 cm. long; *usque ad* *adhuc*, up to now, until now; *usque ad* *apicem*, up to the tip; *usque ad* *Floridam*, as far as Florida.  
**usual**: usitatus (part. A), solitus (part. A), usualis (adj. B). **usually**: plerumque (adv.), vulgo (adv.).  
**usurpativus** (adj. A): wrongly used; *sub nomine usurpativo*, under the misapplied name.  
**Usus** (s.m. IV): use, q.v.

## V

**vaccinus** (adj. A): dun in colour.  
**vacillans** (part. B): swinging to and fro; cf. *OSCILLANS*, *VERSATILIS*.  
**Vacuole**: vacuola (s.f. I), abl. sing. vacuola, nom. pl. vacuolae, abl. pl. vacuolis; *protoplasma roseum in centro vacuolam gaseosam praebens*, protoplasm rose in the centre a gas vacuole displaying; *sine vacuola gaseosa centrali*, without a central gas vacuole; *sine vacuolis gaseosis*, without gas vacuoles; *cytoplasma hyalinum, interdum vacuolis digestivis instructum*, cyto-

ut, uti (adv.): how, in what manner. *ut* (conj.): as, like, as for example, so that; *stipulae ut videatur nullae*, stipules as it seems none; *foliis et bracteis ut in typo*, with leaves and bracts as in the type; *ut e statu sicco appareat*, as from the dried state it appears; *ut auctores generi attribuunt*, as authors attribute to the genus; *ut in diagnosi descripta*, as described in the diagnosis.  
**utcunque** (adv.): however.  
**uterque** (pron.): each (of two), either, both.  
**utilis** (adj. B): useful, beneficial. *Utilitas* (s.f. III. ii): usefulness. *utiliter* (adv.): usefully.  
**utique** (adv.): in any case, certainly.  
**Utricle**: utriculus (s.m. II), abl. sing. utriculo, nom. pl. utriculi, abl. pl. utriculis; *utriculi anguste ovati compressi c. 3.5 mm. longi, inferiores squamis breviores, superiores squamis longiores, omnes squamis multo latiores, membranae glabri papillosi apicem versus pluricostati in rostrum breve sensim desinentes*, utricles narrowly ovate compressed about 3.5 mm. long, the lower ones shorter than the scales, the upper ones longer than the scales, all much broader than the scales, membranous glabrous papillose towards the tip many-ribbed in a short beak gradually ending.  
**utricularis** (adj. B), *utriculatus* (adj. A), *utriculosus* (adj. A): bladder-like, bladdery, possessing bladders, inflated; cf. *VESICARIUS*.  
**utrinque** (adv.), *utrinque* (adv.), *utrinsecus* (adv.): on both sides, on the one side and on the other.  
**utroque** (adv.): to both sides, in both directions.  
**uvarius** (adj. A), *uviformis* (adj. B): like a bunch of grapes, i.e. with clustered rounded parts; cf. *BOTRY*.  
**uvidus** (adj. A): moist, wet, humid.

**Vallecula** (s.f. I): furrow between ridges (*juga*) on fruits of *Umbelliferae*; *valleculae in quoque carpello 4*, furrows on each carpel 4; *vittae ad valleculas angustas solitariae*, vittae solitary in the narrow furrows; *valleculae univittatis*, with furrows having one vitta. *valleculatus* (adj. A): provided with furrows.  
**Valley**: *vallis* (s.f. III. viii), *convallis* (s.f. III. viii) 'valley enclosed on all sides', *fauces* (s.f. pl. III. i) 'gorge'.  
**valvaceus** (adj. A): valvate, provided with valves, *valvaris* (adj. B), *valvatus* (adj. A): valvate; *dehiscentia valvaris*, dehiscence by valves; *aestivatio valvata*, aestivation with parts touching at edges but not overlapping. 380  
**Valve**: *valva* (s.f. I), gen. sing. *valvae*, *dat. sing. valvae*, *abl. sing. valva*, *nom. pl. valvae*, *gen. pl. valvarum*, *dat. and abl. pl. valvis*, *lit. 'leaf of a folding door'*; *valva integra reflexa*, valve entire reflexed; *perigonii valvae fructiferae omnes calliferae reticulato-nervosae*, *callis prominentibus lanceolatis levibus haud rugosae*, of the perigon the fruiting valves all callus-bearing reticulately nerved, with callousities (tubercles) prominent lanceolate smooth not rugose;

**capsula bilocularis bivalvis loculicide vel septicide dehiscing, valvis integris membranaceis valvarum marginibus inflexis**, capsule 2-chambered 2-valved loculicidally or septicidally dehiscing, with valves entire membranous with margins of valves inflexed; *valvae dissimiles, una tantum raphem nodulunque centralem praebens*, valves unlike, one only a raphe and central nodule furnishing; *valvae rotundatae vel ellipticae*, valves rounded or elliptic; *valvis ellipticis, non tumidis, regulariter usque ad apices obtusos attenuatis*, with valves elliptic, not swollen, regularly up to the blunt tips drawn out.  
**-valved** : -valvis (adj. B).  
**Valve-view**: *facies* (s.f. V) *valvaris*, *facies frontalis*; cf. *VIEW*.  
**Valvule**: *valvula* (s.f. I), declined as *valva*; *valvula inferior trinervis acuta mutica*, lower valvule (lemma) 3-nerved acute but without an appendage; *valvula superiora aut nulla aut minima aut ovario major*, upper valvule (palea) lacking or very small or than the ovary larger; *antherae a basi ad apicem valvula revoluta decidua dehiscentes*, anthers from base to tip by a revolute deciduous valvule dehiscing; *antherae valvulis sursum dehiscentes*, anthers by valvules from below upwards dehiscing.  
**vanishing**: *evanescens* (part. B), *evanidus* (adj. A); *costa sub apice evanida*, midrib vanishing before reaching the tip.  
**variable**: *variabilis* (adj. B), *varius* (adj. A), *mutabilis* (adj. B) (used of colour); cf. *VERSIFORMIS*. *varians* (part. B): varying. **Variation**: *variatio* (s.f. III. vi).  
**varicosus** (adj. A): abnormally enlarged in places.  
**varie** (adv.): variously, diversely.  
**variegated**: *variegatus* (part. A).  
**Variety**: *varietas* (s.f. III. ii), gen. sing. *varietatis*, *abl. sing. varietate*, *nom. pl. varietates*, *gen. pl. varietatum*, *abl. pl. varietatibus*.  
**vario** (verb, conj. I): diversify, change, vary; *maxime variat structura statuta magnitudine latitudine et forma*, most greatly it varies in structure stature size width and form.  
**Variole**: *variola* (s.f. I), *abl. sing. variola*.  
**various**: *varius* (adj. A); *semina forma situ et directione varia*, seeds as to form position and direction varied. **variously**: *varie* (adv.), *diverse* (adv.).  
**varnished**: *laccatus* (adj. A), *vernicosus* (adj. A).  
**varying**: *varians* (part. B); *fructus magnitudine variantes*, fruits varying in size, fruits of variable size.

**Vas** (s.n. III. iv): vessel, duct; *vasa laticis*, lactiferous ducts; *vasa scalariformia*, scalariform vessels; *fasciculo vasorum unico in sectione litteram V simulante*, with a single bundle of vessels in section resembling the letter V.

**vascular**: *vascularis* (adj. B); *plantae vasculares*, vascular plants, i.e. phanerogams and pteridophytes.

**Vasculum** (s.n. II): *vasculum*, field collecting case for botanical specimens; cf. *Proc. Bot. Soc. Brit. Isles*, 3: 135-150 (1959).

**vase-shaped**: *urceolatus* (adj. A).

**vast**: *immensus* (adj. A).

**vectus** (part. A): carried.

**vegetabilis** (adj. B): belonging or relating to plants; *regnum vegetable*, the plant kingdom.

**Vegetatio** (s.f. III. vi): vegetation.

**vegetativus** (adj. A): vegetative.

**vegetus** (adj. A): fresh, vigorous (opp. of MARCIDUS).

**Veil**: *velum* (s.n. II), *abl. sing. velo*.

**Veining**: *nervatura* (s.f. I), *venatio* (s.f. III. vi) not to be confused with class.

*L. venatio* 'hunting'; the following are the chief terms used to describe veining. *Anastomosis* (cross-connexion of veins forming network): *anastomosis* (s.f. III). **Angle of Divergence**: *angulus* (s.m. II). Following Lindley, when the angle formed by the midrib and the diverging vein or nerve is between 10° and 20° the vein may be said to be *nearly parallel* (*vena subparallelis*, *abl. pl. venis subparallelis*); when between 20° and 40°, *diverging* (*vena divergens*, *abl. pl. venis divergentibus*); when between 40° and 60°, *spreading* (*vena patens*, *abl. pl. venis patentibus*); between 60° and 80°, *divaricating* (*vena divaricata*, *abl. pl. venis divaricatis*); between 80° and 90°, *right-angled* (*vena rectangularis*, *abl. pl. venis rectangularibus*); between 90° and 120°, *oblique* (*vena obliqua*, *abl. pl. venis obliquis*); beyond 120°, *reflexed* (*vena retroflexa*, *abl. pl. venis retroflexis*). It is usually better to state the angle direct, e.g. *sub angulo circa 40°-50°*. **Area between Veins**: *intervenium* (s.n. II). **Area enclosed by Veins or Veinlets**, *Vein-islet*: *areola* (s.f. I). **Midrib** (central or main vein): *costa* (s.f. I), *nervus medius*, *nervus centralis*. **Midrib of Fern-pinna**: *costula* (s.f. I). **Nerve** (used for principal or more conspicuous unbranched veins starting from the midrib or base of the blade, as distinguished from those which divide or branch and are termed veins or veinlets):

*nervus* (s.m. II), *nervus secundarius* (the midrib being *nervus medius*), *nervus lateralis*. **nerved** (ribbed): *nervatus* (adj. A), *nervosus* (adj. A). **netted**: *reticulatus* (adj. A). **Network of Veinlets**: *rete* (s.n. III. x). **Vein**: *vena* (s.f. I), *acc. sing. venam*, *gen. sing. venae*, *abl. sing. vena*, *nom. pl. venae*, *acc. pl. venas*, *gen. pl. venarum*, *abl. pl. venis*. **Veining**, **Types of**: when the veins (nerves) enter the blade at the base and run more or less parallel to the margin without branching from base to tip, the venation is termed *parallel*, with the veins (nerves) straight (*venis rectis*) or *acrodrome*, with veins curved (*venis curvatis*). In *penni-parallel* venation (*venatio pinnatiparallela*) the veins (nerves) are parallel with each other but run outwards from the midrib. When the veins form a network, the venation is *reticulate* (*venatio reticulata*). When three or more principal veins of a network diverge outwards from the base of the blade, the venation is *radiate*, *palmate*, *digitate* or *pedate* (*venatio radiata*, *v. palmata*, *v. digitata*, *v. pedata*) or in a peltate leaf *actinodrome* (*venatio actinodroma*). When the veins (nerves) diverge outwards from a midrib, the venation is *pinnate* (*venatio pinnata*) and is further distinguished as *undivided* or *craspedodrome* (*venatio craspedodroma*) when the principal veins run straight to the margin without dividing, as *looped* or *brochidodrome* (*venatio brochidodroma*) when they run outwards but curve markedly before reaching the margin and unite with the vein above, thereby forming a loop, as *arched* or *campylocentrum* (*venatio campylocentrum*) when they run outwards but do not reach the margin, arch upwards and break up or terminate without forming loops. Most of these terms were introduced by C. von Ettingshausen, *Die Blatt-Skelette der Dikotyledonen* (Vienna, 1861); *folia nervis lateralibus utroque latere 14-17 subhorizontalibus parallelis i.e. sub angulo fere recto e nervo mediano abeuntibus*, leaves with lateral nerves at each side 14-17 almost horizontal parallel i.e. at almost a right angle from the central nerve (midrib) departing; *sub angulo circa 40°-50° prodeuntibus*, at angle of about 40°-50° going forth; *folia nervis utroque costae latere 10-15 marginem versus valde arcuatis*, leaves with nerves 10-15 each side of midrib towards margin strongly arched; *folia valde reticulata nervis*

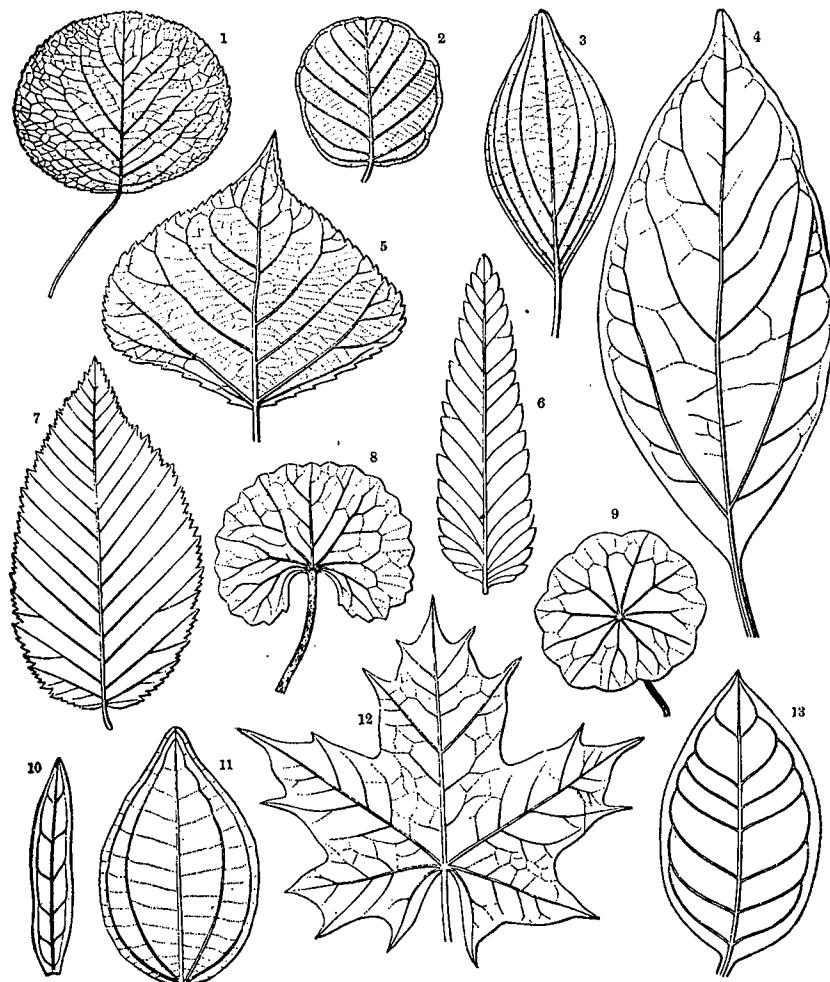


Fig. 40 Types of Veining, with one main Nerve

1, reticulatus; 2, brochidodromus; 3, 4, camptodromus; 5, reticulato-pinnatus; 6, 7, craspedromus; 8, 9, reticulatus; 10, brochidodromus; 11, camptodromus; 12, radiatus; 13, brochidodromus (from A. Kerner von Marilaun, *Pflanzenleben*; 1887)

atque rete venularum utrinque subaequaliter manifestis, leaves strongly reticulate with nerves and network of veinlets on both surfaces almost equally evident; *nervis supra obsoletis vel nullis subtus prominulis reticulato-anastomosantibus, areolis minutis*, with nerves on the upper side inconspicuous or lacking on the lower side standing out slightly and reticulately joining together, the enclosed areas minute; *folia triplinervia, nervo medio supra per totam longitudinem impresso subtus crassissimo elevato, pari laterali 3-5 mm. supra basi abeunte supra plus minus impresso 1-2 mm. a margine remoto usque ad apicem producto, venulis transversalibus numerosis 2-3 mm. inter se distantibus*, leaves triple-nerved, with middle nerve (midrib) on the upper side for the whole length

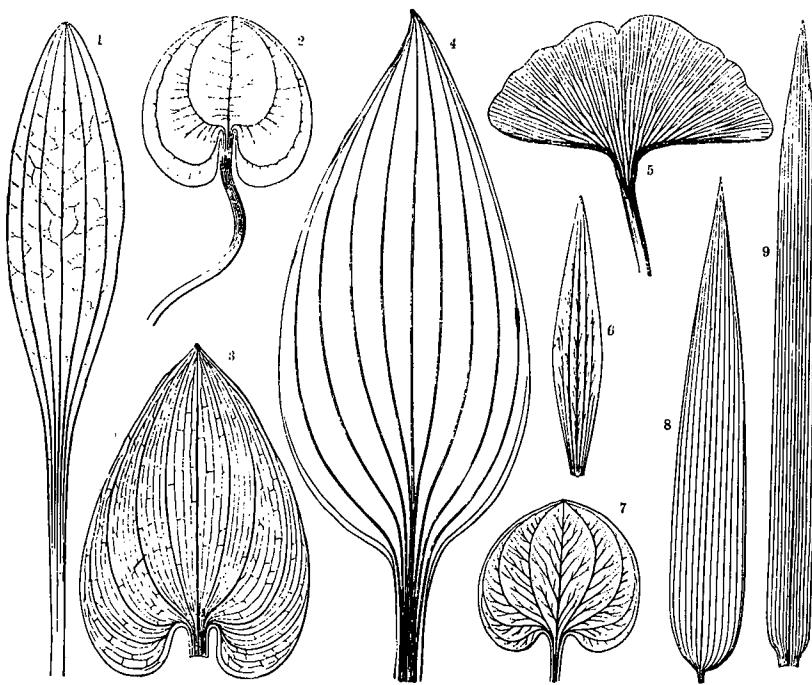


Fig. 41 Types of Veining, with several Nerves

1, acrodromus (solidinervis), 2-4, campylodromus; 5, flabellato-furcatus; 6, acrodromus; 7, pedato-acrodromus; 8, 9, parallelus (from A. Kerner von Marilaun, *Pflanzenleben*; 1887)

impressed, on the lower side very thick raised, with the lateral pair 3-5 mm. above the base going forth on the upper side more or less impressed 1-2 mm. from the margin distant up to the apex produced, with transverse veinlets numerous 2-3 mm. between themselves apart; *folia (nervulo submarginali tenui neglecto) e basi trinervia*, leaves (with the almost marginal thin veinlet ignored) from base three-nerved; *nervo medio supra inferne impresso sed ad apicem versus evanido subbus elevato*, with middle nerve (midrib) on the upper side in lower part impressed but towards apex vanishing on lower side raised; *nervi secundarii sub angulo 60° excurrentes recti indivisi vel furcati*, secondary nerves at angle of 60° issuing forth straight undivided or forked; *folia subtus praesertim ad nervos nervuloso hirsuta*, leaves below especially at nerves and nervules hairy; *folia secus venas elevatas pubescens*, leaves along

the raised veins pubescent; *folia subtus praeter venas virides satis rubra*, leaves below except for the green veins quite red; *venae pinnatae tenuissimae aut creberimae flabellato-multifurcatae aut distantes furcatae venulis divergentibus*, veins pinnate very slender either very crowded many times forked in a fan-like way or remote forked with veinlets diverging; *venae tenues ramosissimae venulisque in maculas (areolas) hexagonoidea inaequales anastomosantes et reticulum densum efformantes*, veins slender much branched and with the veinlets into spots (areoles) hexagonal unequal joining together and a dense network forming; *venae simplices in apicem dentium frondis excurrentes*, veins simple into apex of teeth of frond running out; *species quod foliorum nervaturam distincta*, species as to the nervation of the leaves distinct; *venae marginem non attingentes sed ante marginem arcuatim confluentes*, veins

not reaching the margin but before the margin by arching joined together; *venae liberae, parte tercia superiore soros gerentes, marginem vix attingentes*, veins free, in the upper third bearing sori, the margin hardly reaching. *veinless*: *avenius* (adj. A). *Veinlet*: *venula* (s.f. I). 343-364

*vel* (conj.): or, q.v.

*Velamen* (s.n. III. vi): cover, covering; *stratum tenue saxa limumque velamine continuo obducens*, layer thin spreading over rocks and mud as a continuous cover; *velamen radicum*, velamen, i.e. the moisture-absorptive covering of aerial roots of tropical orchids and aroids. *velatus* (part. A): covered, partially concealed from view.

*Vellus* (s.n. III): fleece, wool, down; *herba vellere longorum pilorum obtecta*, herb with a wool of long hairs covered.

*Velum* (s.n. II): veil; *velum partiale*, *velum hymeniale*, partial veil of agarics; *velum universale*, universal veil or volva.

*velut* (adv.), *veluti* (adv.): just as, like, as, for example.

*velutinus* (adj. A): velvety, densely covered with fine short soft erect hairs. 275

*Velvetum* (s.n. II): velvet.

*Vena* (s.f. I): vein: *see VEINING*.

*venenatus* (part. A): poisonous, q.v.

*venenosus* (adj. A): very poisonous.

*venetus* (adj. A): venice-blue.

*venosus* (adj. A): having many branched veins or conspicuously veined. 364

*Venter* (s.m. III. v): expanded basal part of an archegonium, ventral surface.

*ventralis* (adj. B): ventral, i.e. on the inner face or the one towards the axis.

*ventraliter* (adv.): ventrally.

*ventricosus* (adj. A): swollen, especially on one side. 97

*Venula* (s.f. I): veinlet; *see VEINING*.

*venustus* (adj. A): beautiful, graceful.

*Ver* (s.n. III. v): spring; *ineunte vere*, at the beginning of spring.

*verdigris*: *aeruginous* (adj. A), *aeruginosus* (adj. A).

*vere* (adv.): truly, in fact, rightly, exactly; *see REVERA, VERO*.

*vergens* (part. B): trending towards.

*veris* (gen. sing. of *Ver*): of the season of spring; *see VERNALIS, VERNUS*.

*verosimiliter* (adv.): very likely, probably.

*Verruca* (s.f. I): wart, wart-like outgrowth or swelling. *verrucatus* (adj. A), *verrucosus* (adj. A): warty. *verruciformis* (adj. B): shaped like a wart.

*Verrucula* (s.f. I): small wart. *verruculosus* (adj. A): covered with small wart-like outgrowths; cf. *TUBERCULATUS*. 268

*versatilis* (adj. B): versatile, turning freely on its support, attached on the back so as to be capable of movement. 448

*vermiformis* (adj. B): worm-shaped.

*vermilion*: *cinnabarinus* (adj. A).

*vernacular*: *vernacularis* (adj. A); *nomen vernaculum*, vernacular name.

*vernalis* (adj. B): vernal, pertaining to spring.

*Vernatio* (s.f. III. vi): vernation, the manner in which leaves are arranged within the leaf-bud. When of a folded kind this may be *conduplicate* (*vernatio conduplicata*), with the leaf folded lengthwise along the midrib so that the two halves of the upper side face one another; *pleated* or *plicate* (*vernatio plicata*), with the leaf folded several times lengthwise along the primary veins like the pleats of a closed fan; *reclinate* (*vernatio reclinata*), with the leaf bent downwards; *wrinkled*, *crumpled* or *corrugated* (*vernatio corrugata*); *equitant* (*vernatio equitans*), with the leaves overlapping entirely and in parallel; *obvolute* (*vernatio obvoluta*), when the margin of one leaf overlaps that of the leaf opposite. When of a rolled kind the vernation may be *revolute* (*vernatio revoluta*), with both margins of the leaf rolled back towards the midrib on the lower side; *involute* (*vernatio involuta*), with both margins rolled forward towards the midrib on the upper side; *convolute* (*vernatio convoluta*, v. *convolutiva*, v. *superolutiva*), when the leaf is wholly rolled lengthwise from one margin, so that one margin is at the centre of the coil and the other outside; *circinate* (*vernatio circinata*), when the leaf is rolled spirally from the apex downwards; *folia juniora convolutiva nec conduplicata*, young leaves convolute not conduplicate; *folia vernatione plicata*, leaves with plicate vernation. 365-386

*vernicious* (adj. A): varnished.

*vernus* (adj. A): vernal, pertaining to spring.

*vero* (adv.): in truth, in fact, certainly, exactly; *see REVERA, VERO*.

*veronicinus* (adj. A): veronica-violet (H.C.C. 6.39).

*verosimiliter* (adv.): very likely, probably.

*Verruca* (s.f. I): wart, wart-like outgrowth or swelling. *verrucatus* (adj. A), *verrucosus* (adj. A): warty. *verruciformis* (adj. B): shaped like a wart.

*Verrucula* (s.f. I): small wart. *verruculosus* (adj. A): covered with small wart-like outgrowths; cf. *TUBERCULATUS*. 268

*versatilis* (adj. B): versatile, turning freely on its support, attached on the back so as to be capable of movement. 448

versicolor (adj. B), versicolorus (adj. A): variously coloured or changing colour; cf. MUTABILIS.

versiformis (adj. B): of different shapes, altering in shape with age.

versum (adv.): turned in the direction of.

versus (adv. and prep. with acc.): towards, q.v.

Vertex (s.m. III. i): the top, highest point; *vertice*, at the top; *a vertice*, from above, down from above.

verticalis (adj. B): vertical, placed in a direction from the base to the tip, perpendicular. 396

Verticillaster: verticillaster (s.m. II), *nom. pl.* verticillastri, *abl. pl.* verticillastris; *verticillastri nunc multiflori axillares vel ad apices ramorum racemosi nunc in capitula terminalia conferti nunc omnes pauciflori*, verticillasters (false-whorls) sometimes many-flowered axillary or at tips of branches racemose sometimes in terminal heads crowded sometimes all few-flowered.

verticillate (adv.), verticillatum (adv.): verticillately, in a whorled manner.

verticillatus (adj. A): verticillate, whorled. *Verticillus* (s.m. II): whorl, ring of organs on the same plane. 478

verus (adj. A): true, genuine (*not to be confused with veris*).

very: usu. expressed by use of the adj. superlative ending *-issimus* or *-illimus*, sometimes by the adv. *maxime* 'in the highest degree', *valde* 'strongly', *minime* 'least of all', *magnopere* 'greatly', *bene* 'well', or the adj. prefix *per-*, e.g. *perpusillus*, very small.

vesicarius (adj. A): bladder-like, inflated.

Vesicula (s.f. I): vesicle, small bladder, air-cavity. *vesicularis* (adj. B), *vesicularatus* (adj. A): bladder-like. *vesiculosus* (adj. A): covered with little bladders or blisters.

vespertinus (adj. A): belonging to the evening, q.v.; cf. DIURNUS, NOCTURNUS.

Vessel: vas (s.n. III. iv), q.v.

vestiens (part. B): clothing.

vestigialis (adj. B): vestigial. *Vestigium* (s.n. II): vestige, remnant, trace.

Vestimentum (s.n. II): clothing, covering.

vestitus (part. A): clothed.

veterus (adj. A), *vetus* (adj. A), *vetustus* (adj. A): aged.

vexillaris (adj. B): vexillary, i.e., in aestivation of Leguminosae, with the standard petal much larger than the others and folded around them. 385

Vexillum: vexillum (s.n. II), *abl. sing.* *vexillo*; see STANDARD PETAL, WING.

Via (s.f. I): road, path. *viaticus* (adj. A): growing along roads or paths.

Vibex (s.f. III): the mark of a blow, scar.

vibratile: *vibratorius* (adj. A).

vicarious: *vicarius* (adj. A).

vice (adv.): instead of, for, on account of.

vicieni (adv.): growing in twenties.

vicen-simus (adj. A): twentieth. *viciens* (adv.), *vicies* (adv.): twenty times.

Vicinia (s.f. I), *Vicinitas* (s.f. II): neighbourhood, nearness. *vicinus* (adj. A): near, neighbouring.

vicissim (adv.): on the other hand, in turn.

videtur (3rd pers. sing. pres. pass. of *video*): 'it seems'; *ut videtur*, as you will, apparently; *frons ex icona pedalis videtur*, frond according to the illustration appears to be one foot long.

viduus (adj. A): deprived of, without.

View: *aspectus* (s.m. IV); *aspectu frontalit*, in frontal view. Often expressed by *visus* (part. A), indicating position from which seen; cf. SEEN.

vigens (part. B): thriving, flourishing.

viginti (num. adj. indecl.): twenty.

vigorous: *fortis* (adj. B), *vegetus* (adj. A).

Villi (s.m. II. pl.): long weak hairs.

villus (adj. A): villous, i.e. shaggy with fairly long soft straight not interwoven ascending hairs. 273

Vinen (s.n. III): a long flexible shoot, an osier. *viminalis* (adj. B): bearing shoots for plaiting and wicker-work.

vineous (adj. A): having long flexible shoots, used for wicker-work.

vinaceus (adj. A), *vinicolor* (adj. B), *vinosus* (adj. A): wine-coloured, purplish-red.

violaceus (adj. A): violet (H.C.C. 36); *violaceus* refers to the blue-red colours nearer blue, *purpureus* nearer red.

violet: *violaceus* (adj. A), *ianthinus* (adj. A). *violet-*: in *L. comp.*, *violaceo*, in *Gk. comp.*, *ion-*, *iono-*; *ionandrus*, with violet stamens; *ionanthus*, with violet flowers; *violaceopictus*, painted with violet; *violiflorus*, with flowers like a *Viola*.

virellus (adj. A): greenish, somewhat green. *virens* (part. B): green. *virescens* (part. B): becoming green.

Virga (s.f. I): slender green branch, twig, scion, rod, stripe; cf. VIRGULA.

virgatus (adj. A): twiggy, long and slender, or streaked, rod-like.

virgineus (adj. A): pure white.

Virgula (s.f. I): a little twig or wand.

Viridarium (s.n. II): pleasure garden, flora.

viridi-: in *L. comp.*, green-; *viridiflorus*, green-flowered. *viridescens* (part. B): becoming green. *viridianus* (adj. A): viridian-green (H.C.C. 55). *viridis* (adj. B): green. *viridulus* (adj. A): greenish.

virinus (adj. A): relating to a virus.

virosus (adj. A): stinking, poisonous.

Virus: virus (s.n. II), *gen. sing.* *viri*, *nom. pl.* *vira*, *gen. pl.* *virorum* (to be distinguished from *virorum*, of men).

viscid: *viscidus* (adj. A), *viscosus* (adj. A); cf. GLUTINOSUS. 300

visible: *visibilis* (part. B), *manifestus* (adj. A) 'apparent, evident', *aspectabilis* (adj. B) 'worthy of being seen'.

visus (part. A): seen; *specimina ab auctore visa*, specimens seen by the author; *species a nobis non visa*, species by us not seen; see SEEN, VIEW.

Vita (s.f. I): life.

Vitamin: *vitaminum* (s.n. II), *gen. sing.* *vitamini*, *abl. sing.* *vitamino*, *nom. pl.* *vitamina*, *gen. pl.* *vitaminorum*, *abl. pl.* *vitaminis*.

vitellinus (adj. A): egg-yolk yellow, 'dull yellow just turning to red' (Lindley).

viti-: in *L. comp.*, pertaining to the vine (*Vitis vinifera*); *viticola*, dweller on the vine; *vitifolius*, vine-leaved (but *viticifolius*, with leaves like *Vitex*).

vitreus (adj. A): of glass, glassy, i.e. transparent and green-tinged; cf. TRANSPARENT. *Vitrum* (s.n. II): glass.

Vitta (s.f. I): aromatic oil-tube in fruit of Umbelliferae, longitudinal rib of diatom, stripe, band; *vittae tenues vel tenuissimae ad valleculas solitariae inconspicuae*, vittae slender or very slender solitary in the furrows inconspicuous; *vitta marginali cellulis sclerotis formata*, with marginal band formed by sclerotic cells.

vittatus (adj. A): longitudinally striped, bearing vittae.

vittiformis (adj. B): band-shaped.

vivens (part. B): living.

vividus (adj. A): vivid, bright, pure in colour.

viviparus (adj. A): viviparous, i.e. germinating or sprouting while still attached to parent; cf. PROLIFERUS.

vivus (adj. A): living, fresh; *bracteolea in vivo albæ, in sicco brunneæ*, bracteoles in a living state white, in a dried state brown.

vix (adv.): with difficulty, scarcely, barely.

volcanic: *volcanicus* (adj. A), *volcanicus* (adj. A), *volcanius* (adj. A); in *terra volcanico exusta*, on burnt-out volcanic soil; in *montibus vulcanicis*, on volcanic mountains; in *porto Nagasaki post explosiones vulcanicas submarinas cum Fucus variis appulsa*, in the port of Nagasaki after submarine volcanic explosions with various *Fuci* brought to land. *Volcano*: mons (s.m. III. ix) *ignivomus*; in *monte olim ignivomo*, on the mountain formerly vomiting fire.

volubilis (adj. B): twining, q.v. 418

Volume (book): *volumen* (s.n. III. vi), *tomus* (s.m. II).

volutus (part. A): rolled up.

Volva: *volva* (s.f. I), *abl. sing.* *volva*, *nom. pl.* *volvae*, *abl. pl.* *volvis*; *volva arcte vaginata irregulariter 4-5-lobata extus grisea*, volva closely sheathed irregularly 4-5-lobed outside grey. *volvatus* (adj. A): provided with a volva.

-vorus (adj. A): in *L. comp.*, devouring, consuming, feeding upon; *pigmentorus*, consuming pigments, destroying paint.

vulcanicus (adj. A), *vulcanius* (adj. A): volcanic, q.v.

vulgaris (adj. B), *vulgatus* (part. A): common, general, ordinary.

vulgo (adv.): commonly, generally.

vulneratus (part. A): wounded, damaged.

-vulnerus (adj. A): in *L. comp.*, -wounded.

Vulnus (s.n. III): wound.

vulviformis (adj. B): like a cleft with projecting edges.

## W

Wall: *paries* (s.m. III. ii), *gen. sing.* *parietis*, *dat. sing.* *parieti*, *abl. sing.* *parieti*; *ovula parieti ovarii affixa subhorizontalis*, ovules to the wall of the ovary attached almost horizontal.

wanting: *carens* (part. B, transitive) 'being without'; intransitive 'wanting' expressed by *deficiens*, *nullus*, *deest*, *desunt*; *caulis foliis carens*, stem wanting leaves; *folia deficiens*, leaves lacking; cf. DEEST, LACKING, WITHOUT.

warm: *calidus* (adj. A) 'hot', *tepidus* (adj. A) 'just warm'; cf. THERMALIS.

Wart: *verruca* (s.f. I): wart-like; *verruciformis* (adj. B). *warty*: *verrucatus* (adj. A), *verrucosus* (adj. A), *phymatodeus* (adj. A); cf. TUBERCULATUS.

Wasteland: *incultum* (s.n. II), *locus* (s.m. II) *incultus*.

wasting away: *tabescens* (part. B), *tabidus* (adj. A).

Water: *aqua* (s.f. I), *gen. sing.* *aquae*, *abl. sing.* *aqua*, *nom. pl.* *aquæ*, *gen. pl.* *aquarium*, *abl. pl.* *aquis*; *plantæ in aquis tranquillis* *haud rapide fluentibus crescentes*, plants in still never rapidly flowing waters growing; *aqua pluvialis*, rain water; *aqua dulcis*, fresh water; *aqua marina*, sea water; *aqua subsalsa*, brackish water; *summa aqua*, the surface of the water; *aqua marinae et dulcis hospites*, of water sea and fresh the guests, i.e. inhabitants of sea water and fresh water. *water-inhabiting*: *aquaticus* (adj. A), *aquatilis* (adj. B).

watery; aquaticus (adj.A), aquosus (adj.A).  
Waterfall: cataracta (s.f. I).

waved: sinuatus (part. A) (*applied to flat edges curving strongly in and out*), undulatus (adj. A) (*applied also to edges waved upwards and downwards*). 132

Wax: cera (s.f. I), abl. sing. cera. wax-gold: cerinus (adj. A). waxy: ceraceus (adj. A), cereus (adj. A). 324

weak: infirmus (adj. A), debilis (adj. B), invalidus (adj. A); *of colours*, pallidus (adj. A), dilutus (part. A). weakly: infirme (adv.), leniter (adv.) 'mildly, gently'; *of colours*, pallide (adv.), dilute (adv.).

wedge-shaped: cuneatus (part. A), cuneiformis (adj. B). 113, 175

Week: hebdomas (s.f. III), gen. sing. hebdomadis; *coloniae aetate duarum vel tritum hebdomadum*, colonies at the age of two or three weeks, 2- or 3-week-old colonies. weekly: hebdomadal (adj. B). well: bene (adv.).

West: occidens (s.m. III. ix), gen. sing. occidentis; *ad occidentem*, to the west. west, western: occidentalis (adj. B), (*as an epithet only*) hesperius (adj. A).

wet: humidus (adj. A), udus (adj. A), uvidus (adj. A), irriguus (adj. A); cf. moist. wetted: madefactus (part. A), madidus (adj. A).

when: quum (conj.), ubi (adv.); petala *longitudine varia, erecta ubi brevia, patentissima ubi elongata*, petals in length varying, erect when short, most outspread when elongated.

whence: unde (adv.). where: ubi (adv.). wherever: ubicumque (adv.).

wherefore: quamobrem.

whether: *see or*.

which: qui (rel. pron.), q.v.

while: dum (conj.).

whip-like: flagelliformis (adj. B). 47

white: albus (adj. A) 'dull white', candidus (adj. A) 'glossy white', albidus (adj. A) 'whitish', niveus (adj. A) 'snow-white', eburneus (adj. A) 'ivory-white' (i.e. with yellow tinge), lacteus (adj. A) 'milk-white' (i.e. with bluish tinge), albicans (part. B) 'becoming white', virgineus (adj. A) 'pure white', white: *in L. comp.*, albi-, albo-, *in Gk. comp.*, leuc-, leuco-, also chion-, chiono- 'snowy', galact-, galacto- 'milky'.

whitened: dealbatus (part. A), whitish: albidus (adj. A), exalbidus (adj. A). 309

Whole: totum (s.n. II), whole: totus (adj. A), omnis (adj. B), integer (adj. A) 'undivided', as a whole: *in universum*. Whorl: verticillus (s.m. II), acc. sing. verticillum, abl. sing. verticillo, nom. pl.

verticilli, abl. pl. verticillis; *folia in verticillum disposita*, leaves in a whorl arranged; *caulis verticillis usque 8-foliatis*, stem with whorls up to 8-leaved; *ramuli verticillorum inter se dissimiles, primarii plerumque 8, secundarii minores circa 16, duobus ordinibus*, branchlets of the whorls between themselves dissimilar, the primary ones commonly 8, the secondary ones smaller about 16, in two series. whorled: verticillatus (adj. A), verticillaris (adj. B). in a whorled manner: verticillatim (adv.), verticillate (adv.). 478

wide: latus (adj. A). widely: late (adv.). widened: dilatatus (part. A). Width: latitudo (s.f. III vi).

wild: ferus (adj. A), sylvestris (adj. B), incultus (adj. A).

willowy: salignus (adj. A).

wilting: languescens (part. B).

Wind: ventus (s.m. II). wind-: *in Gk. comp.*, anemo-.

winding: maeandromorphis (adj. B), sinuosus (adj. A), tortuosus (adj. A); cf. TWINNING.

Window: fenestra (s.f. I), abl. sing. fenestra; *fenestra magna pellucida viridis*, window large transparent green; *fenestra apicalis*, apical window; *fenestra basalis*, basal window.

windowed: fenestratus (adj. B), fenestratus (adj. A).

wine-coloured: vinaceus (adj. A), vino-color (adj. B), vinosus (adj. A).

Wing: ala (s.f. I), acc. sing. alam, gen. sing.

ala, abl. sing. ala, nom. pl. alae, gen. pl. alarum, abl. pl. alis; *seminum testa in alam expansa*, the testa of seeds into a wing expanded; *alae oblongae purpureae, carina longiores vel carinam aequantes vexillo vix breviores*, wings oblong purple, longer than the keel or equalising the keel scarcely shorter than the standard; *corolla alis oblongis carina longioribus et vexillo brevioribus*, corolla with oblong wings longer than the keel and shorter than the standard petal. wing-: *in L. comp.*, alato-, *in Gk. comp.*, ptero-; *alatocaulis*, ptero-caulis, with winged stem; *pterocarpus*, with winged fruits. winged: alatus (adj. A); *in Gk. comp.*, -pterus. wing-shaped: aliformis (adj. B). 60

Winter: hiems (s.f. III. vi), gen. sing. hiemis, abl. sing. hieme; *hieme florens*, flowering in winter. pertaining to winter: hiemalis (adj. B), hibernus (adj. A), brumalis (adj. B); cf. PER HIEMANS.

Winterbud: hibernaculum (s.n. II).

wiped clean: detersus (part. A).

wire-like: filo metallico similis (adj. B).

with: cum (prep. with abl.) 'together with'.

Usually expressed by the abl. case alone without a prep., sometimes expressed by acc. using *praebens* (part. B), 'offering' or *habens* (part. B) 'having'.

withered: marcidus (adj. A), emarcidus (adj. A). Withered but persistent parts: induviae (s.f. I. pl.), abl. pl. induviis.

withering: marcescens (part. B).

within: intra (adv. and prep. with acc.), intus (adv.), interius (adv.).

without (lacking): sine (prep. with abl.), absque (prep. with abl.); exclusus (part. A. with abl.) 'excluded' is sometimes appropriate; *sine numero*, without a number; *absque descriptione latina*, without a Latin description; *cum vel sine spinis*, with or without spines; cf. DEEST, EXPERS, LACKING, WANTING.

without (outside): extra (adv. and prep. with acc.), extus (adv.): cf. OUTSIDE.

wonderful: mirus (adj. A). wonderfully: mire (adv.), mirimodis (adv.).

Wood (timber): lignum (s.n. II), abl. sing. ligno.

Wood (woodland): silva (s.f. I) less used than medieval sylva (s.f. I), gen. sing.

sylvae, abl. sing. sylva, nom. pl. sylvae, acc. pl. sylvas, gen. pl. sylvarum, abl. pl. sylvis; nemus (s.n. III. iv), nom. pl. nemora, gen. pl. nemorum, abl. pl. nemoribus.

Woodcut: xylographia (s.f. I), nom. pl. xylographiae; cf. ILLUSTRATION.

wooden, woody: ligneus (adj. A), lignosus (adj. A); cf. XYL-. 325

Wood: lana (s.f. I), abl. sing. lana; vellus (s.n. III), abl. sing. vellere. wool-: *in L. comp.*, lani-, lanos-, *in Gk. comp.*, erio-, lasio-; *lanosantherus*, *lasiantherus*, with woolly anthers. woolly: lanatus (adj. A), lanatus (adj. A), lanuginosus (adj. A). 276

World: orbis (s.m. III. vii), gen. sing. orbis, also orbis terrae, orbis terrarum; herbae in alpestribus totius orbis crescentes, herbs in high places of the whole world growing; species inter tropicos

in utroque orbe vigentes, species between the tropics on both sides of the world thriving; *in regionibus intertropicis utriusque hemisphaerii*, in intertropical regions of both hemispheres. Old

World (s.): orbis vetus, orbis antiquus; *per totum orbis antiqui hemisphaerium boreale*, through the whole northern hemisphere of the Old World. Old

World (adj.): gerontogaeus (adj. A); species gerontogaeae, Old World species. New World (s.): orbis novus, America. New World (adj.): neogaeus (adj. A), americanus (adj. A).

world-wide: cosmopolitanus (adj. A), per orbem terrarum late dispersus (part. A); herbae cosmopolitanae, inter tropicos rarae, herbs world-wide, between the tropics rare.

worm-shaped: lumbrialis (adj. B), lumbriiformis (adj. B), vermiformis (adj. B); cf. ANGUILLIFORMIS. 52

Wound: vulnus (s.n. III); *see INJURY*.

wounded: vulneratus (part. A). -wounded: *in L. comp.*, -vulnerus.

woven: textus (part. A). Wrinkle: ruga (s.f. I). wrinkled: rugosus (adj. A), rugatus (part. A), caperatus (part. A); corrugatus (part. A); *in Gk. comp.*, rhyti-, rhytido-. 375

written: scriptus (part. A).

wrong: falsus (adj. A). wrongly: false (adv.), male (adv.).

## X

xanth-, xantho-: *in Gk. comp.*, yellow; *xanthochymus*, with yellow sap or latex; *xanthorrhizus*, with yellow roots.

xerampelinus (adj. A): 'dull red with a strong mixture of brown' (Lindley).

xero-: *in Gk. comp.*, dry; *xerophilus*, loving dry places; *xerophyllus*, with dry leaves.

xiph-, xipho-: *in Gk. comp.*, sword-like; *xiphodon*, with sword-like teeth.

xiphoides (adj. A): sword-like; *see ENSIFORMIS, GLADIATUS*.

xyl-, xylo-, -xylon: *in Gk. comp.*, woody, relating to wood; *xylophilus*, wood-loving, living on (and usually destroying) wood; *xyorrhizus*, with woody roots or rootstock; *melanoxyton*, with black wood.

Xylem: xylema (s.n. III), gen. sing. xylematis.

Xylographia (s.f. I): woodcut.

Xylopodium: xylodium (s.n. II).

## Y

Year: annus (s.m. II); *cf. AGE*. yearly: annuus (adj. A).

Yeast: fermentum (s.n. II).

yellow: luteus (adj. A), flavus (adj. A), aureus (adj. A), vitellinus (adj. A). Pure yellows include *mimosinus*, mimosa-yellow (H.C.C. 60.2), *canarius*, canary-yellow (H.C.C. 2), *aureolinus*, aureolin (H.C.C. 3), *stramineus*, straw-yellow (H.C.C. 60.4), *citrinus*, lemon-yellow (H.C.C. 4). Pale greenish-yellows

include *primulinus*, primrose-yellow (H.C.C. 60.1), *sulphureus*, sulphur-yellow (H.C.C. 1), *flavus dresdanus*, dresden-yellow (H.C.C. 64), passing into *luteo-viridis*, uranium-green (H.C.C. 63), and *citrino-viridis*, *viridis citrinus*, citron-green (H.C.C. 64). The addition of red gives *ranunculinus*, buttercup-yellow (H.C.C. 5), *indico-flavus*, indian-yellow (H.C.C. 6), *croceus*, saffron-yellow (H.C.C. 7), passing into *aurantiacus*, orange (H.C.C. 12). Very pale yellow or yellowish colours are indicated by *luteolus*, *flavidus*, *ochroleucus*, *eburneus*. Greyed-yellows include *bubalinus*, buff, chamois, *succineus*, amber, *isabelinus*, *ochraceus*, ochre-yellow. *yellow* : in *L. comp.*, *flav*, *flavi*, *flavo*, *luteo*, in *Gk. comp.*, *chrys*, *chryso*, *xanth*, *xantho*; *flavinerius*, *xanthoneurus*, yellow-nerved. *yellowish* : *flavidus* (adj. A), *luteolus* (adj. A).

*yet* : *tamen* (conj.) 'notwithstanding', *attamen* (adv.) 'but yet', *quoniam* (conj.) 'although, and yet', *saltem* (adv.) 'at least', *etiam* (conj.) 'and also, even yet'. *as yet* : *ad hoc* (adv.). *not yet* : *nondum* (adv.).

*yoked* : *jugatus* (adj. A); in *L. comp.*, *-jugus*, in *Gk. comp.*, *-zygus*, *zygo*.

*young* : *juvenis* (adj. B); cf. AGE. *younger* : *junior* (comp. adj. B); *rami juniores angulati*, *vetustiores teretes*, younger branches angled, older ones terete.

*Yonth* : *juventus* (s.f. III. ii); *juventute*, in youth. *youthful* : *juvenilis* (adj. B), *primaevus* (adj. A); cf. AGE.

## Z

*zantho*- : in *Gk. comp.*, variant of *XANTHO*. *zebrinus* (adj. A) : striped fairly regularly with white or yellow.

*zigzag* : *valde flexuosus* (adj. A), *fractiflexus* (adj. A), *anfractuoso-flexuosus* (adj. A); *modo dicto gallice et anglice* 'zigzag', in the manner called 'zigzag' in French and English.

*Zinc* : *zincum* (s.n. II), *gen. sing. zinci*.

*zonatim* (adv.) : in a zoned or banded manner. *zonatus* (adj. A) : zoned, banded, marked circularly.

*Zone* : *zona* (s.f. I), *gen. sing. zonae*. zone-less : *azonus* (adj. A).

*zoo*- : in *Gk. comp.*, relating to animals.

*zygo*- : in *Gk. comp.*, joined, yoked; *zygomeris*, with parts joined in pairs.

*Zygodesma* (s.n. III) : clamp; cf. *FIBULA*.

*zygomorphic* : *zygomorphus* (adj. A).

*Zygospor* : *zygospora* (s.f. I), *abl. pl. zygosporis*.

*Zygote* : *zygota* (s.f. I), *nom. pl. zygotae*, *abl. pl. zygotis*; *zygotis ellipsoideis circa 50  $\mu$  longis*, with zygotes ellipsoid about 50  $\mu$  long.

*zymogens* (adj. A) : ferment-producing.

## CHAPTER XXVI

## General Bibliography

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## SYNOPSIS POLYGLOTTA

id est, gallica (f), hispanica (e), lusitanica (p), germanica (d), suecica (s) et  
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# Simple Plane Shapes

About 1925 W. B. Turrill (1890-1961) standardized on a mathematical basis the commonly used terms for the shapes of leaves, leaflets and petals. Over many years his chart circulated only in manuscript but became widely known and adopted. The numbered entries below correlate it with the Systematics Association chart (1962) on pp. 318-319. l = length (longitudino); b = breadth (latitudino).

A. ELLIPTIC SERIES. Sides curved, tapering equally to base and apex, the greatest breadth at the middle.

1. *peranguste ellipticus* (very narrowly elliptic) ..... l:b = 6:1
2. *anguste ellipticus* (narrowly elliptic) ..... l:b = 3:1
3. *ellipticus* (elliptic) ..... l:b = 2:1
4. *late ellipticus* (broadly elliptic) ..... l:b = 3:2
5. *rotundus* (rotund) ..... l:b = 6:5
6. *circularis* (circular), *orbicularis* (orbicular) ..... l:b = 6:6

B. OBLONG SERIES. Sides almost straight and parallel for some distance, the ends tapering rapidly.

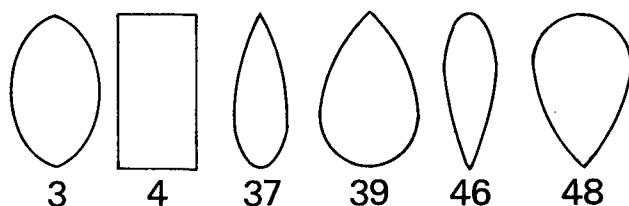
12. *linearis* (linear) ..... l:b = 12 or more: 1
13. *culturatus* (culturate) *loratus* (lorate) ..... l:b = 6 or 8:1
14. *anguste oblongus* (narrowly oblong) ..... l:b = 3:1
15. *oblongus* (oblong) ..... l:b = 2:1
16. *late oblongus* (broadly oblong) ..... l:b = 3:2
17. *perlate oblongus* (very broadly oblong) ..... l:b = 6:5

D. OVATE SERIES. Sides curved, the greater breadth below the middle.

36. *anguste lanceolatus* (narrowly lanceolate) ..... l:b = 6:1
37. *lanceolatus* (lanceolate); cf. pp. 325, 454 ..... l:b = 3:1
38. *anguste ovatus* (narrowly ovate) ..... l:b = 2:1
39. *ovatus* (ovate) ..... l:b = 3:2
40. *late ovatus* (broadly ovate) ..... l:b = 6:5
41. *perlate ovatus* (very broadly ovate) ..... l:b = 6:6

E. OBOVATE SERIES. Sides curved, the greatest breadth above the middle.

45. *anguste oblanceolatus* (narrowly oblanceolate) ..... l:b = 6:1
46. *oblanceolatus* (oblanceolate) ..... l:b = 3:1
47. *anguste obovatus* (narrowly obovate) ..... l:b = 2:1
48. *obovatus* (obovate) ..... l:b = 3:2
49. *late obovatus* (broadly obovate) ..... l:b = 6:5
50. *perlate obovatus* (very broadly obovate) ..... l:b = 6:6



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'It is about time somebody put an end to the traditional neo-classical shandy-gaff which is passed off as botanical Latin'. Editor, *New Scientist*. 3. I. 1957.



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